

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.25 MGD wastewater treatment plant. This permit action consists of updating the proposed effluent limits to reflect the current Virginia WQS (effective January 6, 2011) and updating permit language as appropriate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9VAC25-260-00 et seq.

1. Facility Name and Mailing Address: Town of Middleburg STP  
P.O. Box 187  
Middleburg, VA 20118  
SIC Code : 4952 WWTP  
  
Facility Location: 500 East Washington Street  
Middleburg, VA 20118  
County: Loudoun  
  
Facility Contact Name: Martha Semmes  
Telephone Number: (540) 687-5152
2. Permit No.: VA0024775  
Expiration Date of previous permit: August 30, 2011  
Other VPDES Permits associated with this facility: VAN010120  
Other Permits associated with this facility: None  
E2/E3/E4 Status: N/A
3. Owner Name: Town of Middleburg  
Owner Contact/Title: Martha Semmes / Town Administrator  
Telephone Number: (540) 687-5152
4. Application Complete Date: April 21, 2011  
Permit Drafted By: Susan Mackert  
Date Drafted: June 17, 2011  
Draft Permit Reviewed By: Alison Thompson  
Date Reviewed: June 27, 2011  
WPM Review By: Bryant Thomas  
Date Reviewed: July 5, 2011  
Public Comment Period : Start Date: August 18, 2011  
End Date: September 16, 2011
5. Receiving Waters Information: See Attachment 1 for the Flow Frequency Determination\*  
Receiving Stream Name : Wancopin Creek  
Stream Code: 1aWAC  
Drainage Area at Outfall: 2.19 square miles  
River Mile: 2.94  
Stream Basin: Potomac  
Subbasin: Potomac  
Section: 9  
Stream Class: III  
Special Standards: None  
Waterbody ID: VAN-A05R  
7Q10 Low Flow: 0 MGD  
7Q10 High Flow: 0.127 MGD (Dec. – May)  
1Q10 Low Flow: 0 MGD  
1Q10 High Flow: 0.099 MGD (Dec. – May)  
30Q10 Low Flow: 0.0014 MGD  
30Q10 High Flow: 0.18 MGD  
Harmonic Mean Flow: 0 MGD  
30Q5 Flow: 0.018 MGD  
303(d) Listed: Receiving Stream – Yes  
303(d) Listed: Downstream - Yes  
TMDL Approved: Receiving Stream - No  
Date TMDL Approved: N/A  
TMDL Approved: Downstream - Yes  
Date TMDL Approved: May 1, 2003 (*E.coli*)  
TMDL Approved: Downstream - Yes  
Date TMDL Modified: October 30, 2006 (*E.coli*)  
TMDL Approved: Downstream - Yes  
Date TMDL Approved: April 26, 2004 (Sediment)

\*The drainage area shown in Attachment 1 differs slightly from that developed by planning staff for this reissuance (2.19 square miles versus 2.08 square miles, respectively). Because the latitude and longitude provided by the facility did not accurately depict the facility's location, planning staff approximated the location of the facility's outfall. As such, the drainage area calculated in 2001 is being carried forward with this reissuance.

6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input checked="" type="checkbox"/> Other - 9VAC25-820 (Nutrient GP)
<input checked="" type="checkbox"/> EPA NPDES Regulation	

7. Licensed Operator Requirements: Class II

8. Reliability Class: Class I

9. Permit Characterization:

<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input checked="" type="checkbox"/> Pretreatment Program Determination	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. **Wastewater Sources and Treatment Description:**

The Town of Middleburg STP receives domestic wastewater from the Town of Middleburg (approximate population of 673). The STP consists of passive and mechanical screening, an influent pumping station, two equalization basins (EQ), two biological treatment tanks, two membrane tanks, stabilization (Membrane Bioreactor System), UV disinfection, and effluent aeration by mechanical means and cascade aeration.

The STP is fed by one pump station as well as gravity lines. Wastewater enters the headworks where screening takes place. Flow passes through the screen into the plant pump station where it is pumped to one of two equalization (EQ) basins. Each basin is capable of holding 75,000 gallons of influent wastewater. From the EQ basins, flow is then pumped to one of two pre-anoxic tanks which are operated at low level dissolved oxygen to assist in nitrogen removal. Each pre-anoxic tank is capable of holding 16,000 gallons of raw wastewater. From the pre-anoxic tank, wastewater flows by gravity to the aeration tank for BOD<sub>5</sub> removal and for nitrification. Wastewater is then pumped to the post-anoxic tanks where ferric oxide for phosphorus removal and micro-c to aid denitrification are added to the post anoxic chamber. Wastewater is then discharged via gravity to the membrane tank system. The facility has two membrane tanks each containing two ZeeWee cassettes with each cassette comprised of 26 membrane modules to provide filtration.

After filtration, flow is then directed to the ultraviolet (UV) disinfection unit. The UV facility consists of two banks operated in series with each bank containing four lamps per bank. Flow then is directed to post aeration.

Final effluent is then discharged via Outfall 001 to Wancopin Creek.

The facility received a Certificate to Operate (CTO) for the 0.25 MGD expansion on September 1, 2010. As of this reissuance, the plant is treating wastewater at the 0.25 MGD flow tier and all references to the 0.135 MGD flow tier have been removed from the permit.

See Attachment 2 for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude *
001	Domestic Wastewater	See Item 10 above.	0.25 MGD	38° 58' 24? N 77° 43' 33? W
* The latitude and longitude shown in the table above differ slightly from those provided in the application. These coordinates were obtained by planning staff and used for development of the planning statement. The difference ultimately has no impact on permit limit development.				
See Attachment 3 for (Middleburg, DEQ #206B) topographic map.				

**11. Sludge Treatment and Disposal Methods:**

Under normal operation activated sludge is returned from the membrane/sludge sump to the pre-anoxic tank. If wasting is required, sludge is pumped to the aerated sludge holding tanks. The solids generated at this facility are transported to the Upper Occoquan Service Authority (UOSA - VA0024988) in Centreville for final treatment and disposal. The application indicates that approximately 50 dry metric tons are generated each year.

**12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:** The facilities and monitoring stations listed below either discharge to or are located within the following waterbody: VAN-A05R

TABLE 2

1aGOO021.28	DEQ freshwater probabilistic monitoring station located on Goose Creek downstream from Route 734.
1aGOO022.44	DEQ ambient and biological monitoring station located approximately 4.34 miles downstream of the discharge location on Goose Creek at the Route 734.
1aWAC003.31	DEQ freshwater probabilistic monitoring station located on Wancopin Creek at Route 50.
VA0024112	Foxcroft School (Goose Creek)
VA0024759	U.S Federal Emergency Management Agency - Bluemont (Jefferies Branch, UT)
VA0027197	Notre Dame Academy (Goose Creek, UT)
VA0091464	U.S Federal Emergency Management Agency - Bluemont (Jefferies Branch, UT)
VAG406193	Howard L. Latimer Residence (Woolf's Mill Run)
VAG406470	Fred Allen Residence (Goose Creek, UT)

**13. Material Storage:**

TABLE 3 - Material Storage

Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
Liquichlor (12.5%)	4 – 53 gallon cylinders	Stored Inside
Citric Acid (50%)	4 – 55 gallon cylinders	Stored Inside
MicroCglycerin (micro-C)	6 – 55 gallon cylinders	Stored Inside
Ferric Chloride (38 – 40%)	6 – 55 gallon cylinders	Stored Inside
Soda Ash	20 – 5 pound bags	Stored Inside
Diesel Fuel	1700 gallons	Above Ground Storage Tank

**14. Site Inspection:** Performed by Susan Mackert and Bryant Thomas on June 29, 2011. The site visit confirms that the application package received on April 12, 2011, is accurate and representative of actual site conditions. The site visit memo can be found as Attachment 4.

**15. Receiving Stream Water Quality and Water Quality Standards:**

a) Ambient Water Quality Data

The nearest Department of Environmental Quality freshwater probabilistic monitoring station, 1aWAC003.31, is located upstream from the outfall location. Biological monitoring finds a benthic macroinvertebrate impairment, resulting in an impaired classification for the aquatic life use. The wildlife use is considered fully supporting. The fish consumption and recreation uses were not addressed. The receiving stream, Wancopin Creek, is listed on the current 303(d) list. Two biological monitoring events in 2002 each resulted in a Virginia Stream Condition Index (VSCI) score which indicates an impaired macroinvertebrate community.

The nearest downstream Department of Environmental Quality ambient monitoring station, 1aGOO022.44, is located approximately 4.34 miles downstream from the outfall location. Biological and associated chemical monitoring indicate that the aquatic life, recreation, fish consumption and wildlife uses are fully supporting.

The 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for the following downstream impairments in the Goose Creek watershed:

- Recreation Use Impairment

Goose Creek: Sufficient excursions from the maximum *E. coli* bacteria criterion (6 of 41 samples - 14.6%) were recorded at DEQ's ambient water quality monitoring station (1aGOO011.23) at the Route 621 crossing to assess this stream segment as not supporting of the recreation use goal for the 2010 water quality assessment.

- Fish Consumption Use Impairment

Goose Creek: The fish consumption use is categorized as impaired due to a Virginia Department of Health, Division of Health Hazards Control, PCB fish consumption advisory. The advisory, dated 12/13/04, limits American eel consumption to no more than two meals per month. The affected area includes the following tributaries between the Maryland/Virginia state line near the Route 340 bridge (Loudoun County) to the 1-395 bridge in Arlington County: Goose Creek up to the Dulles Greenway Road bridge, Broad Run up to Route 625, Difficult Run up to the Route 7 bridge, and Pimmit Run up to the Route 309 bridge.

Excursions above the water quality criterion based tissue value (TV) of 20 parts per billion (ppb) for polychlorinated biphenyls (PCBs) in fish tissue were recorded in two species of fish (American eel and smallmouth bass) collected in 2004.

- Aquatic Life Use Impairment

Goose Creek: One of two biological monitoring events in 2008 at station 1aGOO002.38 (Route 7) resulted in a VSCI score which indicates an impaired macroinvertebrate community, as does the mean score of these two sampling events.

The following Total Maximum Daily Load (TMDL) schedule has been established.

- Goose Creek Fish Consumption – Due 2018

The following Total Maximum Daily Loads (TMDLs) have been established.

- Goose Creek Recreation Use (*E. coli*) – Approved by EPA May 1, 2003  
Modified by EPA October 30, 2006

All upstream discharges were taken into account when developing the Goose Creek bacteria TMDL. As such, the facility received a WLA of  $4.36 \times 10^{11}$  cfu/year for *E. coli* since the facility is an upstream source.

- Goose Creek Aquatic Life Use – Approved by EPA April 26, 2004

The facility received a WLA for sediment at the previous design flow of 0.135 MGD. The TMDL did include a growth factor to account for future expansions of point sources. At the 0.25 MGD flow, the facility received a revised WLA of 5.3 tons/year of sediment.

The complete planning statement is located within the permit reissuance file.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal, and the 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment. EPA issued the Bay TMDL on December 29, 2010. It was based, in part, on the Watershed Implementation Plans developed by the Bay watershed states and the District of Columbia.

The Chesapeake Bay TMDL addresses all segments of the Bay and its tidal tributaries that are on the impaired waters list. As with all TMDLs, a maximum aggregate watershed pollutant loading necessary to achieve the Chesapeake Bay's water quality standards has been identified. This aggregate watershed loading is divided among the Bay states and their major tributary basins, as well as by major source categories [wastewater, urban storm water, onsite/septic agriculture, air deposition]. Fact Sheet Section 17.e provides additional information on specific nutrient limitations for this facility to implement the provisions of the Chesapeake Bay TMDL.

b) Receiving Stream Water Quality Criteria

Part IX of 9VAC25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream, Wancopin Creek, is located within Section 9 of the Potomac River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 5a details other water quality criteria applicable to the receiving stream.

Ammonia:

Because of the plant upgrade to 0.25 MGD (CTO issued September 1, 2010), it is staff's best professional judgement that re-evaluating the derivation of ammonia criteria is warranted. However, the plant has been operational at the 0.25 MGD flow for less than one year and staff feels it is inappropriate to utilize effluent data from this operational start-up period.

The fresh water, aquatic life Water Quality Criteria for Ammonia are dependent on the instream temperature and pH. When instream data are unavailable or when the receiving stream critical flows are zero, effluent pH and temperature data may be used to establish the ammonia water quality standard. The 90<sup>th</sup> percentile temperature and pH values are used because they best represent the critical design conditions of the receiving stream. During the previous reissuance of the permit, staff re-evaluated effluent data and found no significant differences from the data used to establish ammonia criteria and subsequent effluent limits in the previous permit. Staff carried forward the previously established pH and temperature values (Attachment 5b) and used them to calculate the ammonia criteria. Because of the operational start-up period, the following effluent pH and temperature values will be carried forward as part of this reissuance process.

TABLE 4 – Effluent pH and Temperature Values (90 <sup>th</sup> Percentile)		
	pH	Temperature
December - May	7.7 S.U.	22°C
June - November	7.3 S.U.	24°C

Because there is no data available for the receiving stream, the following default values were used to calculate the ammonia criteria.

TABLE 5 – Receiving Stream Default pH and Temperature Values (90 <sup>th</sup> Percentile)		
	pH	Temperature
December - May	7.5 S.U.	15°C
June - November	7.5 S.U.	20°C

The ammonia water quality standards calculations are shown in Attachment 5a.

#### Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The 7Q10 of the receiving stream is zero and no ambient data is available, the effluent data for hardness can be used to determine the metals criteria. The hardness-dependent metals criteria in Attachment 5a are based on a single effluent value of 218 mg/L.

#### Bacteria Criteria:

The Virginia Water Quality Standards at 9VAC25-260-170 A state that the following criteria shall apply to protect primary recreational uses in surface waters:

- 1) *E. coli* bacteria per 100 ml of water shall not exceed a monthly geometric mean of the following:

	Geometric Mean <sup>1</sup>
Freshwater <i>E. coli</i> (N/100 ml)	126

<sup>1</sup>For a minimum of four weekly samples [taken during any calendar month].

#### c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9VAC25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Wancopin Creek, is located within Section 9 of the Potomac River Basin. This section has not been designated with any special standards.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched on April 29, 2011, for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Dwarf Wedgemussel, Brook Floater, Wood Turtle, Upland Sandpiper, Loggerhead Shrike, Henslow's Sparrow, Bald Eagle, Green Floater, and Migrant Loggerhead Shrike. The limits proposed in this draft permit are protective of the Virginia Water Quality Standards and protect the threatened and endangered species found near the discharge.

**16. Antidegradation (9VAC25-260-30):**

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1. The critical flows for the stream are zero and at times the stream flow is comprised of only effluent. It is staff's best professional judgment that such streams are Tier 1 since the limits are set to meet the WQS. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

**17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:**

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLA's are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from Attachment A and the permit application has been reviewed and determined to be suitable for evaluation.

The following pollutants require a wasteload allocation analysis: Ammonia and Copper (See Section 17.c.2 of the Fact Sheet for additional discussion).

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [ Q_e + (f) (Q_s) ] - [ (C_s) (f) (Q_s) ]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C <sub>o</sub>	=	In-stream water quality criteria
Q <sub>e</sub>	=	Design flow
Q <sub>s</sub>	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; 30Q10 for ammonia criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
f	=	Decimal fraction of critical flow
C <sub>s</sub>	=	Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C<sub>o</sub>.

c) Effluent Limitations Toxic Pollutants, Outfall 001 –

9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9VAC25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

## 1) Ammonia as N:

Previously established effluent pH and temperature values (from Table 4) and default stream values (Table 5) were used to re-calculate new ammonia water quality criteria, new wasteload allocations (WLAs) and new ammonia limits (Attachments 5a and 5c, respectively). DEQ guidance suggests using a sole data point of 9.0 mg/L for discharges containing domestic sewage to ensure the evaluation adequately addresses the potential for ammonia to be present in the discharge containing domestic sewage.

Changes to ammonia limitations are necessary based on the re-calculation of the ammonia criteria. As such, a monthly average limitation of 3.0 mg/L and the weekly average limitation of 4.1 mg/L are proposed for this reissuance for the months of June to November (Attachment 5c).

In lieu of ammonia limits from December to May, a TKN limit shall be imposed to protect the receiving stream from ammonia toxicity as well as to protect the dissolved oxygen standard. A monthly average TKN limitation of 6.0 mg/L and a weekly average TKN limitation of 9.0 mg/L (for the months of January to December) was implemented with the previous reissuance. Because the facility has been operational at the 0.25 MGD flow for less than one year, it is staff's best professional judgement that it is not necessary to run the Regional Dissolved Oxygen Model to determine if revised limitations for TKN are warranted. As such, the TKN limitations obtained from the 2006 model run (Attachment 6) shall be carried forward with this reissuance.

## 2) Metals:

With the previous reissuance, a Schedule of Compliance for Total Recoverable Copper was removed from the permit based on the proposed expansion to 0.25 MGD. In lieu of a copper limit, the facility was to monitor copper via Attachment A sampling. Copper data obtained from Attachment A was to be reviewed with this permit reissuance to determine if a copper limitation was warranted at the 0.25 MGD flow. A review of the copper data indicates no limit is necessary. See Attachments 5a and 5c, respectively for WLA and limit evaluation.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), carbonaceous biochemical oxygen demand-5 day (CBOD<sub>5</sub>), total suspended solids (TSS), total kjeldahl nitrogen (TKN), and pH limitations are proposed.

CBOD<sub>5</sub> and TKN limitations are based on the stream modeling conducted in December 2005 (Attachment 6) and are set to meet the water quality criteria for D.O. in the receiving stream. The model used is a steady state stream D.O. model based on the belief the discharge is continuous in nature. The 2005 model run was conducted to address the facility's request for an additional tier of 0.25 MGD. To protect the instream minimum dissolved oxygen concentration, the monthly average CBOD<sub>5</sub> limitation was changed from 14 mg/L to 10 mg/L with the 2005 model run. Limitations for CBOD<sub>5</sub> obtained from the 2005 model run replaced those from an earlier model run in 1996.

It is staff's practice to equate the Total Suspended Solids limits with the CBOD<sub>5</sub> limits. TSS limits are established to equal CBOD<sub>5</sub> limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

*E. coli* limitations are in accordance with the Water Quality Standards 9VAC25-260-170.

e) Effluent Annual Average Limitations and Monitoring, Outfall 001 – Nutrients

VPDES Regulation 9VAC25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries. Only concentration limits are now found in the individual VPDES permit when the facility installs nutrient removal technology. The basis for the concentration limits is 9VAC25-40 - *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* which requires new or expanding discharges with design flows of  $\geq 0.04$  MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).

This facility has also obtained coverage under 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited, and otherwise regulated under the general permit and not this individual permit. This facility has coverage under this General Permit; the permit number is VAN010120. Total Nitrogen Annual Loads and Total Phosphorus Annual Loads from this facility are found in 9VAC25-720 – *Water Quality Management Plan Regulation* which sets forth TN and TP maximum wasteload allocations for facilities designated as significant discharges, i.e., those with design flows of  $\geq 0.5$  MGD above the fall line and  $\geq 0.1$  MGD below the fall line.

Monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen, Total Nitrogen, and Total Phosphorus are included in this permit. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9VAC25-820. Annual average effluent limitations, as well as monthly and year to date calculations, for Total Nitrogen and Total Phosphorus are included in this individual permit. The annual averages are based on the offset plan submitted as part of the Registration Statement for 9VAC25-820. The facility is able to self-offset with the established Total Nitrogen and Total Phosphorus annual averages and does not need to obtain additional offsets from other sources.

f) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, CBOD<sub>5</sub>, Total Suspended Solids, Ammonia as N, pH, Dissolved Oxygen, TKN, *E. coli*, Total Nitrogen (calendar year), and Total Phosphorus (calendar year).

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

The mass loading (lb/d) for TKN monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 8.3438.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

The VPDES Permit Regulation at 9VAC25-31-30 and 40 CFR Part 133 require that the facility achieve at least 85% removal for CBOD and TSS (or 65% for equivalent to secondary). The limits in this permit are water-quality-based effluent limits and result in greater than 85% removal.

**18. Antibacksliding:**

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

**19. Effluent Limitations/Monitoring Requirements: Outfall 001**

Design flow is 0.25 MGD

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		<u>Monthly Average</u>		<u>Weekly Average</u>		<u>Minimum</u>	<u>Maximum</u>	<u>Frequency</u>	<u>Sample Type</u>
Flow (MGD)	NA	NL		NA		NA	NL	Continuous	TIRE
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
CBOD <sub>5</sub>	3,4	10 mg/L	9 kg/day	15 mg/L	14 kg/day	NA	NA	3D/W	8H-C
Total Suspended Solids (TSS)	2	10 mg/L	9.0 kg/day	15 mg/L	14 kg/day	NA	NA	3D/W	8H-C
DO	3,4	NA		NA		6.8 mg/L	NA	1/D	Grab
Total Kjeldahl Nitrogen (TKN)	3,4	6.0 mg/L	13 lb/day	9.0 mg/L	19 lb/day	NA	NA	3D/W	8H-C
Ammonia, as N (mg/L) June - November	3	3.0 mg/L		4.1 mg/L		NA	NA	3D/W	8H-C
<i>E. coli</i> (Geometric Mean) <sup>a</sup> .	3	126 n/100mls		NA		NA	NA	3D/W	Grab
Nitrate+Nitrite, as N	3, 5	NL mg/L		NA		NA	NA	1/2W	8H-C
Total Nitrogen <sup>b</sup> .	3, 5	NL mg/L		NA		NA	NA	1/2W	Calculated
Total Nitrogen – Year to Date <sup>c</sup> .	3, 5	NL mg/L		NA		NA	NA	1/M	Calculated
Total Nitrogen - Calendar Year <sup>c</sup> .	3, 5	8.0 mg/L		NA		NA	NA	1/YR	Calculated
Total Phosphorus	3	NL mg/L		NA		NA	NA	1/2W	8H-C
Total Phosphorus – Year to Date <sup>c</sup> .	3, 5	NL mg/L		NA		NA	NA	1/M	Calculated
Total Phosphorus - Calendar Year <sup>c</sup> .	3, 5	1.0 mg/L		NA		NA	NA	1/YR	Calculated

The basis for the limitations codes are:

- |                                    |  |   |
|------------------------------------|--|---|
| 1. Federal Effluent Requirements   | MGD = Million gallons per day.                         | 1/D = Once every day.                       |
| 2. Best Professional Judgement     | NA = Not applicable.                                   | 1/M = Once every month.                     |
| 3. Water Quality Standards         | NL = No limit; monitor and report.                     | 1/2W = Once every two weeks, >7 days apart. |
| 4. Stream Model- Attachment 6      | S.U. = Standard units.                                 | 3D/W = Three days a week.                   |
| 5. 9VAC25-40 (Nutrient Regulation) | TIRE = Totalizing, indicating and recording equipment. | 1/YR = Once every year.                     |

**8H-C** = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected. Where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by =10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Between 10am and 4pm

b. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

c. See Section 20.a. for the calculation of the Nutrient Calculations

**20. Other Permit Requirements:**

- a) Part I.B. of the permit contains quantification levels and compliance reporting instructions. 9VAC25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9VAC25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9VAC25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

- b) Permit Section Part I.C., details the requirements of a Pretreatment Program. The VPDES Permit Regulation at 9VAC25-31-730. through 900., and 40 CFR Part 403 requires POTWs with a design flow of >5 MGD and receiving from Industrial Users (IUs) pollutants that pass through or interfere with the operation of the POTW, or are otherwise subject to pretreatment standards, to develop a pretreatment program.

The Middleburg STP is a POTW with a current design capacity of 0.25 MGD. Since this facility discharges greater than 40,000 gpd, pretreatment program conditions in accordance with DEQ guidance are included in Part I.C of the VPDES permit to determine if a pretreatment program may be needed.

**21. Other Special Conditions:**

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9VAC25-31-200.B.4. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9VAC25-31-200 B.1. and B.2. for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190.E. The permittee shall submit for approval a revised Operations and Maintenance (O&M) Manual or a statement confirming the accuracy and completeness of the current O&M Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO) by December 19, 2011. Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9VAC25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9VAC25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18VAC160-20-10 et seq.) requires licensure of operators. This facility requires a Class II operator.

- f) Reliability Class. The Sewage Collection and Treatment Regulations at 9VAC25-790 require sewage treatment works to achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. Reliability means a measure of the ability of the treatment works to perform its designated function without failure or interruption of service. The facility is required to meet a reliability Class of I.
- g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9VAC25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should data collected and submitted for Attachment A of the permit, indicate the need for limits to ensure protection of water quality criteria, the permit may be modified or alternately revoked and reissued to impose such water quality-based limitations.
- h) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.
- i) Sludge Reopener. The VPDES Permit Regulation at 9VAC25-31-220.C. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.
- j) Sludge Use and Disposal. The VPDES Permit Regulation at 9VAC25-31-100.P; 220.B.2, and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- k) Nutrient Reopener. 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
- l) E3/E4. 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

**22. Changes to the Permit from the Previously Issued Permit:**

- a) Special Conditions:
- The Nutrient Enriched Waters Reopener was removed with this reissuance and replaced with a Nutrient Reopener special condition.
  - The Nutrient Reporting Calculations special condition was removed from the permit with reissuance as nutrient reporting calculations are now found within Part I.B.3 of the permit.
  - A TMDL special condition was added to the permit with this reissuance.
  - The E3/E4 special condition was added to the permit with this reissuance in accordance with current agency practice.
- b) Monitoring and Effluent Limitations:
- All references to the 0.135 MGD flow tier, including monitoring, effluent limitations, and reporting requirements, have been removed from the permit with this reissuance because of the completed upgrade to the 0.25 MGD flow tier.
  - All references to Total Residual Chlorine, including monitoring, effluent limitations, and reporting requirements have been removed from the permit with this reissuance because of the completed upgrade to the 0.25 MGD flow tier which includes UV disinfection.
  - The monthly average ammonia limitation has been revised from 4.1 mg/L to 3.0 mg/L.
  - The weekly average ammonia limitation has been revised from 5.5 mg/L to 4.1 mg/L.
  - Monitoring for Orthophosphate has been removed with this reissuance as the agency has determined this data is longer required to support the development of the Chesapeake Bay TMDL.
  - Total Nitrogen and Total Phosphorus mass loadings have been removed with this reissuance as all mass loadings are governed by the facility's *Watershed General VPDES Permit for Nutrient Discharges to the Chesapeake Bay* (VAN010120).
  - TKN loading units were changed from kg/day to lbs/day to be consistent with the *Watershed General VPDES Permit for Nutrient Discharges to the Chesapeake Bay*.

**23. Variances/Alternate Limits or Conditions: N/A****24. Public Notice Information:**

First Public Notice Date: August 17, 2011

Second Public Notice Date: August 24, 2011

Public Notice Information is required by 9VAC25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3853, [susan.mackert@deq.virginia.gov](mailto:susan.mackert@deq.virginia.gov). See Attachment 7 for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and of all persons represented by the commenter/requester, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit. Requests for public hearings shall state 1) the reason why a hearing is requested; 2) a brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit; and 3) specific references, where possible, to terms and conditions of the permit with suggested revisions. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given. The public may request an electronic copy of the draft permit and fact sheet or review the draft permit and application at the DEQ Northern Regional Office by appointment.

**25. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):**

The nearest Department of Environmental Quality ambient monitoring station, 1aGOO022.44, is located approximately 4.34 miles downstream from the outfall location. The receiving stream, Wancopin Creek which is a tributary to Goose Creek, and Goose Creek are both listed on the current 303(d) list.

The 2010 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report (IR) gives an impaired classification for aquatic life use (sediment), recreational use (*E. coli*), and fish consumption use for Goose Creek. All upstream discharges were taken into account when developing the Goose Creek bacteria TMDL. As such, the facility received a WLA of  $4.36 \times 10^{11}$  cfu/year for *E. coli* since the facility is an upstream source. The facility received a WLA for sediment at the previous design flow of 0.135 MGD. The TMDL did include a growth factor to account for future expansions of point sources. At the 0.25 MGD flow, the facility received a revised WLA of 5.3 tons/year of sediment.

The *E. coli* and TSS limitations within this permit are protective of the Water Quality Standards and the approved TMDLs for the Goose Creek Watershed.

TMDL Reopener: This special condition is to allow the permit to reopened if necessary to bring it in compliance with any applicable TMDL that may be developed and approved for the receiving stream.

**26. Additional Comments:**

Previous Board Action(s): None

Staff Comments: Permit processing was delayed to the late submittal of the facility's reissuance application.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in Attachment 8.

## Fact Sheet Attachments – Table of Contents

Middleburg STP  
VA0024775

2011 Reissuance

Attachment 1	Flow Frequency Determination
Attachment 2	Facility Flow Diagram
Attachment 3	Topographic Map
Attachment 4	Site Visit Memorandum
Attachment 5a	Wasteload Allocation Analysis
Attachment 5b	90% Effluent pH and Temperature Derivation
Attachment 5c	Limit Derivation
Attachment 6	Dissolved Oxygen Model - 2005
Attachment 7	Public Notice
Attachment 8	EPA Checklist

# MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION  
Water Quality Assessments and Planning  
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

**SUBJECT:** Flow Frequency Determination  
Middleburg STP - #VA0024775

**TO:** Shih-Cheng Chang, NRO

**FROM:** Paul E. Herman, P.E., WQAP

**DATE:** September 28, 2001

**COPIES:** Jon VanSoestbergen, M. Dale Phillips, File

This memo supersedes my July 15, 1996, memo to James Engbert concerning the subject VPDES permit.

The Middleburg STP discharges to the Wancopin Creek near Middleburg, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The USGS and VDEQ operated a continuous record gage on the Goose Creek near Middleburg, VA (#01643700) from 1965 to 1967 and from 1969 to 1995. The gage was located at the Route 611 bridge in Loudoun County, VA. The flow frequencies for the gage were projected to the discharge point using proportional drainage areas. The values for the discharge point do not address any springs, withdrawals, or discharges lying upstream. The values for the discharge point and the reference gage are presented below.

## Goose Creek near Middleburg, VA (#01643700):

Drainage Area = 123 mi<sup>2</sup>

1Q10 = 0.0 cfs	High Flow 1Q10 = 8.6 cfs
7Q10 = 0.004 cfs	High Flow 7Q10 = 11.0 cfs
30Q5 = 1.55 cfs	HM = 0.0 cfs
Annual Average = 133 cfs	

1/3/06

30Q10 = 0.12 cfs (0.078 M)  
HF 30Q10 = 16 cfs (10.3 M)

## Wancopin Creek at Middleburg STP discharge point:

Drainage Area = 2.19 mi<sup>2</sup>

1Q10 = 0.0 cfs (0.0 mgd)	High Flow 1Q10 = 0.153 cfs (0.099 mgd)
7Q10 = 0.0 cfs (0.0 mgd)	High Flow 7Q10 = 0.196 cfs (0.127 mgd)
30Q5 = 0.028 cfs (0.018 mgd)	HM = 0.0 cfs (0.0 mgd)
Annual Average = 2.37 cfs (1.53 mgd)	

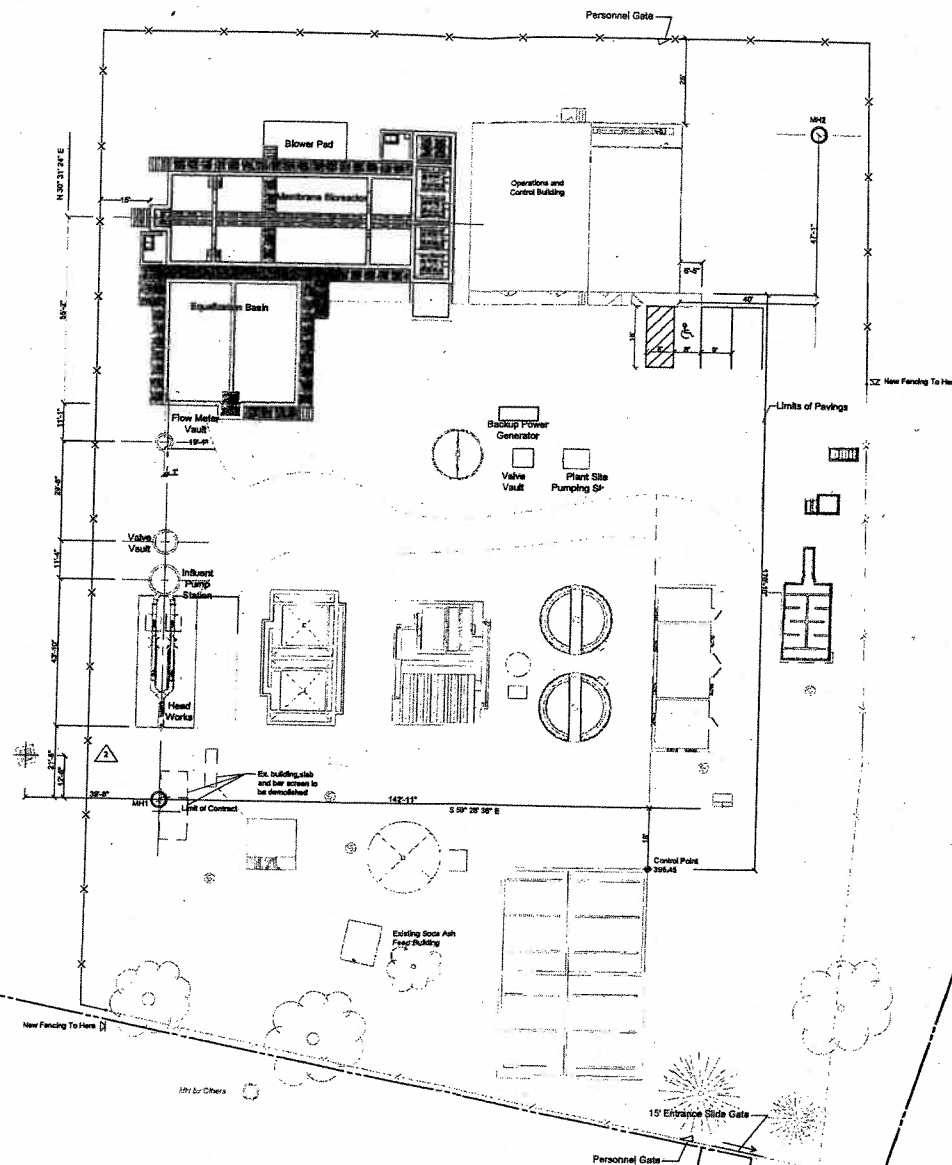
30Q10 = 0.0014 M

HF 30Q10 = 0.18 Mgd

\* The high flow months are December through May.

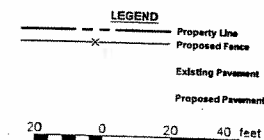
If you have any questions concerning this analysis, please let me know.

<b>SITE</b>	
TOTAL DISTURBED AREA	1.1 Acres
TOTAL PAVED AREAS	15,500 sq ft
FOOTPRINT OF TREATMENT UNITS	1,184 sq ft
HEADWORKS	288 sq ft
EQUALIZATION BASIN	288 sq ft
MEMBRANE BIOREACTOR	608 sq ft
MISCELLANEOUS IMPERVIOUS AREAS	700 sq ft



<b>CONTROL AND OPERATIONS BUILDING</b>	
FOOTPRINT	2800 sq ft (One story, split level)
FLOOR SPACE	
OPERATION ROOM	960 sq ft
ELECTRICAL ROOM	288 sq ft
CHEMICAL FEED ROOM	288 sq ft
LABORATORY	187 sq ft
OFFICE	117 sq ft
LAVATORY	
MAXIMUM HEIGHT	15 ft
PARKING SPACES	3 (Three required plus overflow)
SETBACK DISTANCES	
NORTH	65 ft
EAST	105 ft
SOUTH	230 ft
WEST	180 ft

Note: Limits of new paving include both existing and proposed pavement areas.



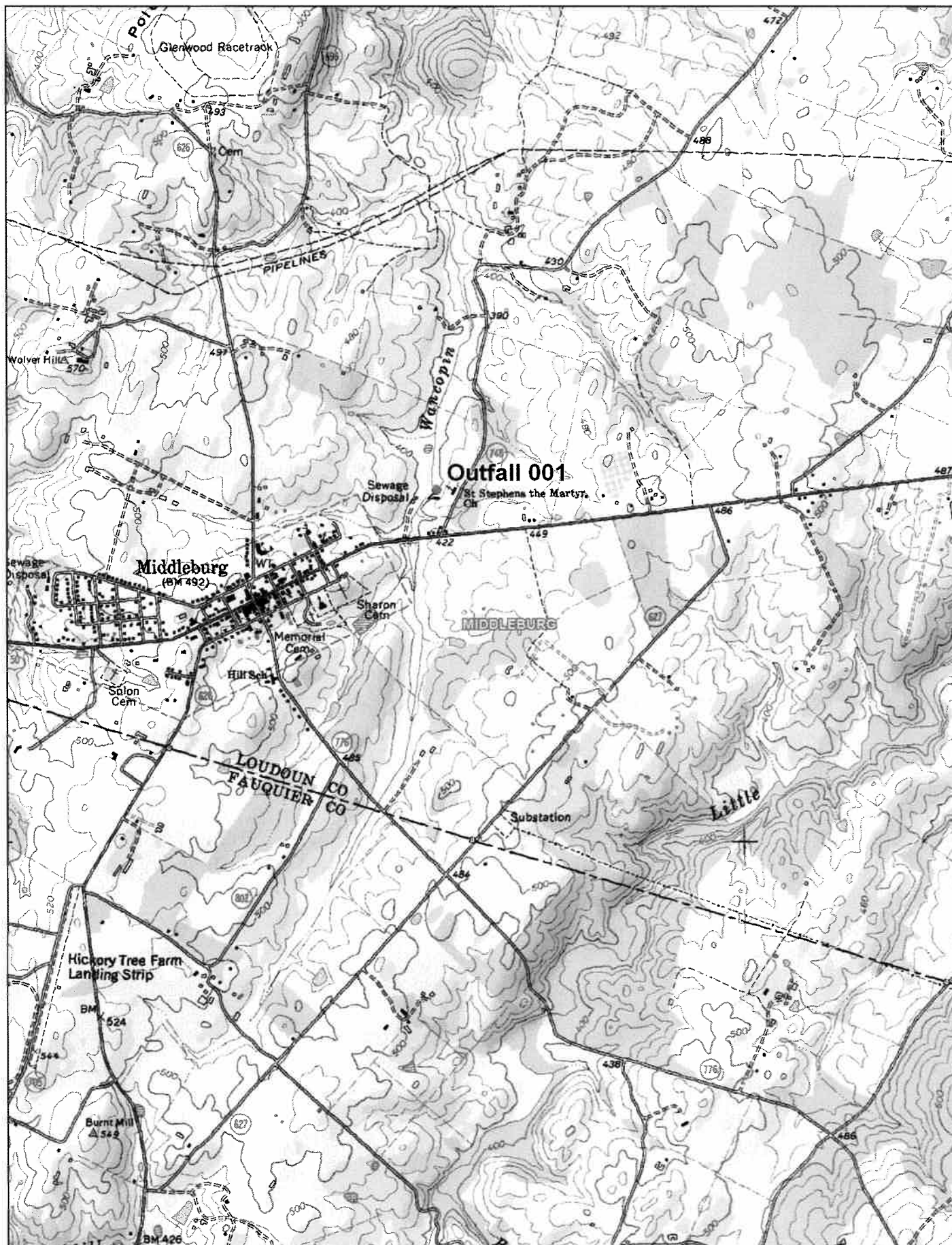
NO.	DESCRIPTION	DATE	REVS	BY	DATE
1	Revised Parking Lot	2/21/08	AEZ	ERS	
2	Adjusted parking area and added drop inlet	11/29/07	AEZ	ERS	
3	Added control points and stations	6/14/07	CMA	AEZ	

**Patton Harris Rust & Associates**  
Engineers, Surveyors, Planners, Landscape Architects.  
10712 Ballantyne Drive, Suite 308  
Fredericksburg, Virginia 22407  
T 540.898.2115  
F 540.898.3230

# TOWN OF MIDDLEBURG WASTEWATER TREATMENT PLANT UPGRADE AND EXPANSION

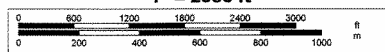
# FIGURE 3-1 SITE PLAN AND STAKEOUT

DESIGN	ERS	SURVEY	NA
DRAWN	TEAM	DATE	APRIL 2007
CHECKED	DJS	REVISION	REVISION DECEMBER 2007
		SCALE	1"= 20'



© 2002 DeLorme. 3-D TopoQuads ®. Data copyright of content owner.  
www.delorme.com

Scale 1 : 25,000  
1" = 2080 ft



**MEMORANDUM**

**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**NORTHERN REGIONAL OFFICE**

13901 Crown Court

Woodbridge, VA 22193

SUBJECT: Reissuance Site Visit  
Middleburg STP (VA0024775)

TO: Permit Reissuance File

FROM: Susan Mackert

DATE: June 30, 2011

A site visit was performed on June 29, 2011, to verify information provided in the facility's permit reapplication package. Information provided in the reapplication package was found representative of actual site conditions.

The Middleburg STP is a municipal wastewater treatment plant with a current design capacity of 0.25 MGD. The facility received a Certificate to Operate (CTO) for the 0.25 MGD expansion on September 1, 2010. The facility treats domestic sewage from the Town of Middleburg.

The STP is fed by one pump station as well as gravity lines. Wastewater enters the headworks (photo 1) where screening (photo 2) takes place. Flow passes through the screen into the plant pump station (photo 3) where it is pumped to one of two equalization (EQ) basins (photos 4 – 5). Each basin is capable of holding 75,000 gallons of influent wastewater. From the EQ basins, flow is then pumped to one of two pre-anoxic tanks (photos 6 – 7) which are operated at low level dissolved oxygen to assist in nitrogen removal. Each pre-anoxic tank is capable of holding 16,000 gallons of raw wastewater. From the pre-anoxic tank, wastewater flows by gravity to the aeration tank for BOD<sub>5</sub> removal and for nitrification. Wastewater is then pumped to the post-anoxic tanks where ferric oxide for phosphorus removal and micro-c to aid denitrification are added to the post anoxic chamber. Wastewater is then discharged via gravity to the membrane tank system. The facility has two membrane tanks each containing two ZeeWee cassettes with each cassette comprised of 26 membrane modules to provide filtration.

After filtration, flow is then directed to the ultraviolet (UV) disinfection unit. The UV facility consists of two banks operated in series with each bank containing four lamps per bank. Flow then is directed to post aeration (photo 8).

Final effluent is then discharged via Outfall 001 (photo 9) to Wancopin Creek.



Photo 1. Headworks.



Photo 2. Screening.



Photo 3. Plant pump station.



Photo 4. Equalization tank number one.



Photo 5. Equalization tank number two.

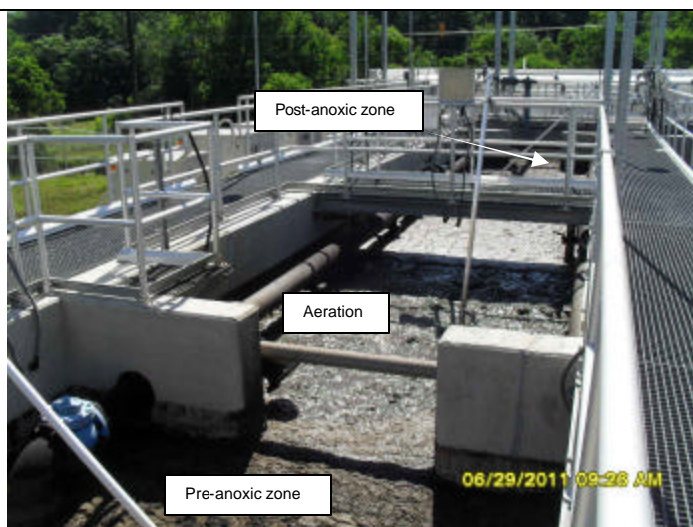


Photo 6. Bioreactor train number one.

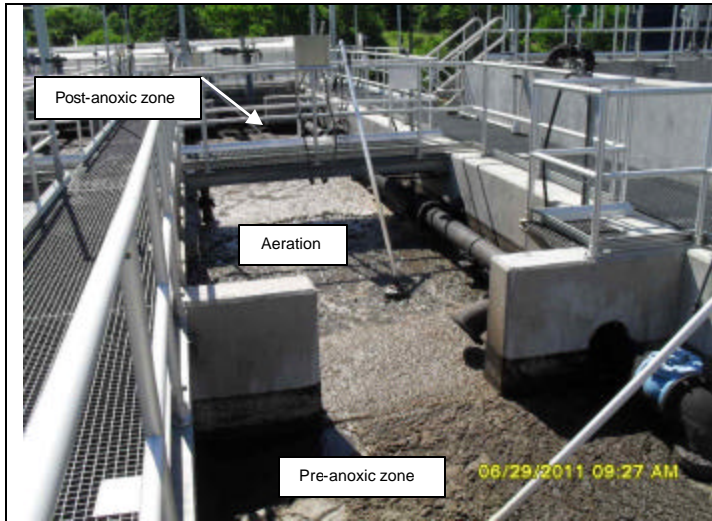


Photo 7. Bioreactor train number two.



Photo 8. Post aeration.



Photo 9. Outfall 001.

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Middleburg STP (June - Nov.)  
Receiving Stream: Wancopin Creek

Permit No.: VA0024775

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information				Stream Flows				Mixing Information				Effluent Information			
Mean Hardness (as CaCO <sub>3</sub> ) =		mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO <sub>3</sub> ) =		218 mg/L						
90% Temperature (Annual) =	20 deg C		7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =		24 deg C						
90% Temperature (Wet season) =	15 deg C		3Q10 (Annual) =	0.0014 MGD	- 3Q10 Mix =	100 %	90% Temp (Wet season) =		22 deg C						
90% Maximum pH =	7.5 SU		1Q10 (Wet season) =	0.015 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =		7.3 SU						
10% Maximum pH =	SU		3Q10 (Wet season) =	0.18 MGD	- 3Q10 Mix =	100 %	10% Maximum pH =		SU						
Tier Designation (1 or 2) =	1		3Q05 =	0.018 MGD			Discharge Flow =		0.25 MGD						
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD											
Trout Present Y/N? =	n														
Early Lie Stages Present Y/N? =	y														

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations				
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	
Acenaphthene	5	--	--	na	9.9E+02	--	--	na	1.1E+03	--	--	--	--	--	--	--	--	--	--	--	na	1.1E+03
Acrolein	0	--	--	na	9.3E+00	--	--	na	1.0E+01	--	--	--	--	--	--	--	--	--	--	--	na	1.0E+01
Acrylonitrile <sup>c</sup>	0	--	--	na	2.5E+00	--	--	na	2.5E+00	--	--	--	--	--	--	--	--	--	--	--	na	2.5E+00
Aldrin <sup>c</sup>	0	3.0E+00	--	na	5.0E+04	3.0E+00	--	na	5.0E+04	--	--	--	--	--	--	--	--	3.0E+00	--	--	na	5.0E+04
Ammonia-N (mg/l) (Yearly)	0	2.62E+01	2.75E+00	na	--	2.62E+01	2.77E+00	na	--	--	--	--	--	--	--	--	--	2.62E+01	2.77E+00	--	na	--
Ammonia-N (mg/l) (High Flow)	0	2.59E+01	3.60E+00	na	--	2.75E+01	6.19E+00	na	--	--	--	--	--	--	--	--	--	2.75E+01	6.19E+00	--	na	--
Anthracene	0	--	--	na	4.0E+04	--	--	na	4.3E+04	--	--	--	--	--	--	--	--	--	--	--	na	4.3E+04
Antimony	0	--	--	na	6.4E+02	--	--	na	6.9E+02	--	--	--	--	--	--	--	--	--	--	--	na	6.9E+02
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	--	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene <sup>c</sup>	0	--	--	na	5.1E+02	--	--	na	5.1E+02	--	--	--	--	--	--	--	--	--	--	--	na	5.1E+02
Benzidine <sup>c</sup>	0	--	--	na	2.0E+03	--	--	na	2.0E+03	--	--	--	--	--	--	--	--	--	--	--	na	2.0E+03
Benzo (a) anthracene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	--	--	--	--	--	--	--	--	--	na	1.8E+01
Benzo (b) fluoranthene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	--	--	--	--	--	--	--	--	--	na	1.8E+01
Benzo (k) fluoranthene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	--	--	--	--	--	--	--	--	--	na	1.8E+01
Benzo (a) pyrene <sup>c</sup>	0	--	--	na	1.8E+01	--	--	na	1.8E+01	--	--	--	--	--	--	--	--	--	--	--	na	1.8E+01
Bis(2-Chloroethyl) Ether <sup>c</sup>	0	--	--	na	5.3E+00	--	--	na	5.3E+00	--	--	--	--	--	--	--	--	--	--	--	na	5.3E+00
Bis(2-Chloroisopropyl) Ether	0	--	--	na	6.5E+04	--	--	na	7.0E+04	--	--	--	--	--	--	--	--	--	--	--	na	7.0E+04
Bis 2-Ethylhexyl Phthalate <sup>c</sup>	0	--	--	na	2.2E+01	--	--	na	2.2E+01	--	--	--	--	--	--	--	--	--	--	--	na	2.2E+01
Bromofom <sup>c</sup>	0	--	--	na	1.4E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	--	na	2.0E+03	--	--	--	--	--	--	--	--	--	--	--	na	2.0E+03
Cadmium	0	9.4E+00	2.1E+00	na	--	9.4E+00	2.1E+00	na	--	--	--	--	--	--	--	--	--	9.4E+00	2.1E+00	--	na	--
Carbon Tetrachloride <sup>c</sup>	0	--	--	na	1.6E+01	--	--	na	1.6E+01	--	--	--	--	--	--	--	--	--	--	--	na	1.6E+01
Chlordane <sup>c</sup>	0	2.4E+00	4.3E+03	na	8.1E+03	2.4E+00	4.3E+03	na	8.1E+03	--	--	--	--	--	--	--	--	2.4E+00	4.3E+03	--	na	8.1E+03
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	--	na	--
THC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	--	na	--
Chlorobenzene	0	--	--	na	1.6E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	--	na	1.7E+03

Parameter (ucl unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>c</sup>	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium III	0	1.1E+03	1.4E+02	na	--	1.1E+03	1.4E+02	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene <sup>c</sup>	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	2.8E+01	1.7E+01	na	--	2.8E+01	1.7E+01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
DDD <sup>c</sup>	0	--	--	na	3.1E+03	--	--	na	3.1E+03	--	--	--	--	--	--	--	--	--	--	na	3.1E+03
DDE <sup>c</sup>	0	--	--	na	2.2E+03	--	--	na	2.2E+03	--	--	--	--	--	--	--	--	--	--	na	2.2E+03
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E+03	1.1E+00	1.0E-03	na	2.2E+03	--	--	--	--	--	--	--	--	--	--	na	2.2E+03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.0E+03	--	--	--	--	--	--	--	--	--	--	na	1.0E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.0E+02	--	--	--	--	--	--	--	--	--	--	na	2.0E+02
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorodibromomethane <sup>c</sup>	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.6E+03	--	--	--	--	--	--	--	--	--	--	na	7.6E+03
1,2-Trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.1E+02	--	--	--	--	--	--	--	--	--	--	na	3.1E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene <sup>c</sup>	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Dieldrin <sup>c</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	--	--	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.7E+04	--	--	--	--	--	--	--	--	--	--	na	4.7E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	9.1E+02	--	--	--	--	--	--	--	--	--	--	na	9.1E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.2E+06	--	--	--	--	--	--	--	--	--	--	na	1.2E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.8E+03	--	--	--	--	--	--	--	--	--	--	na	4.8E+03
2,4-Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4-Dinitrotoluene <sup>c</sup>	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E+08	--	--	na	5.5E+08	--	--	--	--	--	--	--	--	--	--	na	5.5E+08
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	9.5E+01	--	--	--	--	--	--	--	--	--	--	na	9.5E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	9.5E+01	--	--	--	--	--	--	--	--	--	--	na	9.5E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	9.5E+01	--	--	--	--	--	--	--	--	--	--	na	9.5E+01
Endrin	0	8.6E-02	3.6E-02	na	6.4E-02	8.6E-02	3.6E-02	na	6.4E-02	--	--	--	--	--	--	--	--	--	--	na	6.4E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.2E-01	--	--	--	--	--	--	--	--	--	--	na	3.2E-01

Parameter (µg/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hepachlor <sup>c</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	--	--	na	7.9E-04
Hepachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	--	--	na	3.9E-04
Hexachlorobenzene <sup>c</sup>	0	--	--	--	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorobutadiene <sup>c</sup>	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Alpha-BHC <sup>c</sup>	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclohexane	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Beta-BHC <sup>c</sup>	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	--	--	na	1.8E+00
Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	na	1.1E+03	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hexachloroethane <sup>c</sup>	0	--	--	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone <sup>c</sup>	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Keppone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Lead	0	3.2E+02	3.6E+01	na	--	3.2E+02	3.6E+01	na	--	3.2E+02	3.6E+01	na	--	3.2E+02	3.6E+01	na	--	3.2E+02	3.6E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	1.0E-01	na	--	--	--	--	--	--	na	--
Manganese	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.6E+03	--	--	--	na	--	--	--	--	--	--	na	1.6E+03
Methylene Chloride <sup>c</sup>	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	na	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	3.0E-02	na	--	--	--	--	--	--	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	0.0E+00	na	--	--	--	--	--	--	na	--
Nickel	0	3.5E+02	3.9E+01	na	4.6E+03	3.5E+02	3.9E+01	na	4.9E+03	--	--	--	na	--	--	--	--	--	--	na	4.9E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	na	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	7.4E+02	--	--	--	na	--	--	--	--	--	--	na	7.4E+02
N-Nitrosodimethylaniline <sup>c</sup>	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	na	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	na	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodipropylamine <sup>c</sup>	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	na	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	na	--	--	--	--	--	--	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	1.3E-02	na	--	--	--	--	--	--	na	--
PCB Total <sup>c</sup>	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	na	--	--	--	--	--	--	na	6.4E-04
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	na	--	--	--	--	--	--	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	9.2E+05	--	--	--	na	--	--	--	--	--	--	na	9.2E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.3E+03	--	--	--	na	--	--	--	--	--	--	na	4.3E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	na	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	na	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.3E+00	--	--	--	na	--	--	--	--	--	--	na	4.3E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	na	--	--	--	--	--	--	na	--
Uranium (µg/l)	0	--	--	na	--	--	--	na	--	--	--	--	na	--	--	--	--	--	--	na	--

Parameter (µg/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.5E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.5E+03
Silver	0	1.3E+01	--	na	--	1.3E+01	--	na	--	--	--	--	--	--	--	--	--	1.3E+01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane <sup>c</sup>	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E+01	--	--	na	5.0E+01	--	--	--	--	--	--	--	--	--	--	na	5.0E+01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.4E+03	--	--	--	--	--	--	--	--	--	--	na	6.4E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.5E+01	--	--	--	--	--	--	--	--	--	--	na	7.5E+01
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene <sup>c</sup>	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy)proionic acid (Sivex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	2.3E+02	2.3E+02	na	2.6E+04	2.3E+02	2.3E+02	na	2.8E+04	--	--	--	--	--	--	--	--	2.3E+02	2.3E+02	na	2.8E+04

Notes:

- All concentrations expressed as micrograms/liter (µg/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 20 maximum for industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
- Antidegradation WLAs are based upon a complete mix.  
Antidegradation Baseline = (0.25WQC - background conc.) + background conc. for acute and chronic  
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1) \* effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)
Antimony	6.9E+02
Arsenic	9.0E+01
Barium	na
Cadmium	1.3E+00
Chromium III	8.4E+01
Chromium VI	6.4E+00
Copper	1.0E+01
Iron	na
Lead	2.2E+01
Manganese	na
Mercury	4.6E-01
Nickel	2.4E+01
Selenium	3.0E+00
Silver	5.3E+00
Zinc	9.1E+01

Note: do not use OL's lower than the minimum OL's provided in agency guidance

# FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Middleburg STP (Dec. - May)  
Receiving Stream: Wancopin Creek

Permit No.: VA0024775

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information				Stream Flows				Mixing Information				Effluent Information			
Mean Hardness (as CaCO <sub>3</sub> ) =		mg/L	1Q10 (Annual) =	0 MGD	Annual - 1Q10 Mix =	100 %	Mean Hardness (as CaCO <sub>3</sub> ) =	218 mg/L							
90% Temperature (Annual) =	20 deg C		7Q10 (Annual) =	0 MGD	- 7Q10 Mix =	100 %	90% Temp (Annual) =	24 deg C							
90% Temperature (Wet season) =	15 deg C		30Q10 (Annual) =	0.0014 MGD	- 30Q10 Mix =	100 %	90% Temp (Wet season) =	22 deg C							
90% Maximum pH =	7.5 SU		1Q10 (Wet season) =	0.015 MGD	Wet Season - 1Q10 Mix =	100 %	90% Maximum pH =	7.7 SU							
10% Maximum pH =	SU		30Q10 (Wet season) =	0.18 MGD	- 30Q10 Mix =	100 %	10% Maximum pH =	SU							
Tier Designation (1 or 2) =	1		30Q5 =	0.018 MGD			10% Maximum pH =								
Public Water Supply (PWS) Y/N? =	n		Harmonic Mean =	0 MGD			Discharge Flow =	0.25 MGD							
Trout Present Y/N? =	n														
Early Life Stages Present Y/N? =	y														

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria			Wasteload Allocations			Antidegradation Baseline			Antidegradation Allocations			Most Limiting Allocations		
		Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)	Acute	Chronic	HH (PWS)
Acenaphthene	5	--	--	na	9.9E+02	--	na	1.1E+03	--	--	--	--	--	--	--	na
Acetophenone	0	--	--	na	9.3E+00	--	na	1.0E+01	--	--	--	--	--	--	--	na
Acrylonitrile	0	--	--	na	2.5E+00	--	na	2.5E+00	--	--	--	--	--	--	--	na
Aldrin	0	3.0E+00	--	na	5.0E-04	3.0E+00	na	5.0E-04	--	--	--	--	--	3.0E+00	--	na
Amonia-N (mg/l)	0	1.44E+01	1.95E+00	na	--	1.44E+01	1.96E+00	na	--	--	--	--	--	1.44E+01	1.96E+00	na
Ammonia-N (mg/l)	0	1.48E+01	2.95E+00	na	--	1.57E+01	5.07E+00	na	--	--	--	--	--	1.57E+01	5.07E+00	na
Anthracene	0	--	--	na	4.0E+04	--	na	4.3E+04	--	--	--	--	--	--	--	na
Antimony	0	--	--	na	6.4E+02	--	na	6.9E+02	--	--	--	--	--	--	--	na
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	3.4E+02	1.5E+02	na
Barium	0	--	--	na	--	--	na	--	--	--	--	--	--	--	--	na
Benzene	0	--	--	na	5.1E+02	--	na	5.1E+02	--	--	--	--	--	--	--	na
Benzidine	0	--	--	na	2.0E-03	--	na	2.0E-03	--	--	--	--	--	--	--	na
Benzo (a) anthracene	0	--	--	na	1.8E-01	--	na	1.8E-01	--	--	--	--	--	--	--	na
Benzo (b) fluoranthene	0	--	--	na	1.8E-01	--	na	1.8E-01	--	--	--	--	--	--	--	na
Benzo (k) fluoranthene	0	--	--	na	1.8E-01	--	na	1.8E-01	--	--	--	--	--	--	--	na
Benzo (a) pyrene	0	--	--	na	1.8E-01	--	na	1.8E-01	--	--	--	--	--	--	--	na
Bis(2-Chloroethyl) Ether	0	--	--	na	5.3E+00	--	na	5.3E+00	--	--	--	--	--	--	--	na
Bis(2-Chloroisopropyl) Ether	0	--	--	na	6.5E+04	--	na	7.0E+04	--	--	--	--	--	--	--	na
Bis(2-Ethylhexyl) Phthalate	0	--	--	na	2.2E+01	--	na	2.2E+01	--	--	--	--	--	--	--	na
Bromoforn	0	--	--	na	1.4E+03	--	na	1.4E+03	--	--	--	--	--	--	--	na
Butylbenzylphthalate	0	--	--	na	1.9E+03	--	na	2.0E+03	--	--	--	--	--	--	--	na
Cadmium	0	9.4E+00	2.1E+00	na	--	9.4E+00	2.1E+00	na	--	--	--	--	--	9.4E+00	2.1E+00	na
Carbon Tetrachloride	0	--	--	na	1.6E+01	--	na	1.6E+01	--	--	--	--	--	--	--	na
Chlordane	0	2.4E+00	4.3E-03	na	8.1E-03	2.4E+00	4.3E-03	na	8.1E-03	--	--	--	--	2.4E+00	4.3E-03	na
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	8.6E+05	2.3E+05	na
Chloride	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	1.9E+01	1.1E+01	na
Chloroacetylene	0	--	--	na	1.6E+03	--	na	1.7E+03	--	--	--	--	--	--	--	na

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane <sup>c</sup>	0	--	--	na	1.3E+02	--	--	na	1.3E+02	--	--	--	--	--	--	--	--	--	--	na	1.3E+02
Chloroform	0	--	--	na	1.1E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2-Chloronaphthalene	0	--	--	na	1.6E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
2-Chlorophenol	0	--	--	na	1.5E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium III	0	1.1E+03	1.4E+02	na	--	1.1E+03	1.4E+02	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chromium, Total	0	--	--	1.0E+02	--	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene <sup>c</sup>	0	--	--	na	1.8E-02	--	--	na	1.8E-02	--	--	--	--	--	--	--	--	--	--	na	1.8E-02
Copper	0	2.8E+01	1.7E+01	na	--	2.8E+01	1.7E+01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Cyanide, Free	0	2.2E+01	5.2E+00	na	1.6E+04	2.2E+01	5.2E+00	na	1.7E+04	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	na	1.7E+04
DDD <sup>c</sup>	0	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-03	--	--	na	3.1E-03
DDE <sup>c</sup>	0	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03
DDT <sup>c</sup>	0	1.1E+00	1.0E-03	na	2.2E-03	1.1E+00	1.0E-03	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03	--	--	na	2.2E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Diazinon	0	1.7E-01	1.7E-01	na	--	1.7E-01	1.7E-01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Dibenz(a,h)anthracene <sup>c</sup>	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
1,2-Dichlorobenzene	0	--	--	na	1.3E+03	--	--	na	1.4E+03	--	--	--	--	--	--	--	--	--	--	na	1.4E+03
1,3-Dichlorobenzene	0	--	--	na	9.6E+02	--	--	na	1.0E+03	--	--	--	--	--	--	--	--	--	--	na	1.0E+03
1,4-Dichlorobenzene	0	--	--	na	1.9E+02	--	--	na	2.0E+02	--	--	--	--	--	--	--	--	--	--	na	2.0E+02
3,3-Dichlorobenzidine <sup>c</sup>	0	--	--	na	2.8E-01	--	--	na	2.8E-01	--	--	--	--	--	--	--	--	--	--	na	2.8E-01
Dichlorodibromomethane <sup>c</sup>	0	--	--	na	1.7E+02	--	--	na	1.7E+02	--	--	--	--	--	--	--	--	--	--	na	1.7E+02
1,2-Dichloroethane <sup>c</sup>	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
1,1-Dichloroethylene	0	--	--	na	7.1E+03	--	--	na	7.6E+03	--	--	--	--	--	--	--	--	--	--	na	7.6E+03
1,2-trans-dichloroethylene	0	--	--	na	1.0E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
2,4-Dichlorophenol	0	--	--	na	2.9E+02	--	--	na	3.1E+02	--	--	--	--	--	--	--	--	--	--	na	3.1E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane <sup>c</sup>	0	--	--	na	1.5E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
1,3-Dichloropropene <sup>c</sup>	0	--	--	na	2.1E+02	--	--	na	2.1E+02	--	--	--	--	--	--	--	--	--	--	na	2.1E+02
Diadin <sup>c</sup>	0	2.4E-01	5.6E-02	na	5.4E-04	2.4E-01	5.6E-02	na	5.4E-04	--	--	--	--	--	--	--	--	--	--	na	5.4E-04
Diethyl Phthalate	0	--	--	na	4.4E+04	--	--	na	4.7E+04	--	--	--	--	--	--	--	--	--	--	na	4.7E+04
2,4-Dimethylphenol	0	--	--	na	8.5E+02	--	--	na	9.1E+02	--	--	--	--	--	--	--	--	--	--	na	9.1E+02
Dimethyl Phthalate	0	--	--	na	1.1E+06	--	--	na	1.2E+06	--	--	--	--	--	--	--	--	--	--	na	1.2E+06
Di-n-Butyl Phthalate	0	--	--	na	4.5E+03	--	--	na	4.8E+03	--	--	--	--	--	--	--	--	--	--	na	4.8E+03
2,4-Dinitrophenol	0	--	--	na	5.3E+03	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
2-Methyl-4,6-Dinitrophenol	0	--	--	na	2.8E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4-Dinitrofluorene <sup>c</sup>	0	--	--	na	3.4E+01	--	--	na	3.4E+01	--	--	--	--	--	--	--	--	--	--	na	3.4E+01
Dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin	0	--	--	na	5.1E-08	--	--	na	5.5E-08	--	--	--	--	--	--	--	--	--	--	na	5.5E-08
1,2-Diphenylhydrazine <sup>c</sup>	0	--	--	na	2.0E+00	--	--	na	2.0E+00	--	--	--	--	--	--	--	--	--	--	na	2.0E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	9.5E+01	--	--	--	--	--	--	--	--	--	--	na	9.5E+01
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	8.9E+01	2.2E-01	5.6E-02	na	9.5E+01	--	--	--	--	--	--	--	--	--	--	na	9.5E+01
Alpha + Beta Endosulfan	0	2.2E-01	5.6E-02	--	--	2.2E-01	5.6E-02	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Endosulfan Sulfate	0	--	--	na	8.9E+01	--	--	na	9.5E+01	--	--	--	--	--	--	--	--	--	--	na	9.5E+01
Endrin	0	8.6E-02	3.6E-02	na	6.0E-02	8.6E-02	3.6E-02	na	6.4E-02	--	--	--	--	--	--	--	--	--	--	na	6.4E-02
Endrin Aldehyde	0	--	--	na	3.0E-01	--	--	na	3.2E-01	--	--	--	--	--	--	--	--	--	--	na	3.2E-01

Parameter (ugl unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.1E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Fluoranthene	0	--	--	na	1.4E+02	--	--	na	1.5E+02	--	--	--	--	--	--	--	--	--	--	na	1.5E+02
Fluorene	0	--	--	na	5.3E+03	--	--	na	5.7E+03	--	--	--	--	--	--	--	--	--	--	na	5.7E+03
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	1.0E-02	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Heptachlor <sup>c</sup>	0	5.2E-01	3.8E-03	na	7.9E-04	5.2E-01	3.8E-03	na	7.9E-04	--	--	--	--	--	--	--	--	--	--	na	7.9E-04
Heptachlor Epoxide <sup>c</sup>	0	5.2E-01	3.8E-03	na	3.9E-04	5.2E-01	3.8E-03	na	3.9E-04	--	--	--	--	--	--	--	--	--	--	na	3.9E-04
Hexachlorobutadiene <sup>c</sup>	0	--	--	na	2.9E-03	--	--	na	2.9E-03	--	--	--	--	--	--	--	--	--	--	na	2.9E-03
Hexachlorocyclopentadiene <sup>c</sup>	0	--	--	na	1.8E+02	--	--	na	1.8E+02	--	--	--	--	--	--	--	--	--	--	na	1.8E+02
Hexachlorocyclohexane	0	--	--	na	4.9E-02	--	--	na	4.9E-02	--	--	--	--	--	--	--	--	--	--	na	4.9E-02
Alpha-BHC <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hexachlorocyclohexane	0	--	--	na	1.7E-01	--	--	na	1.7E-01	--	--	--	--	--	--	--	--	--	--	na	1.7E-01
Beta-BHC <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hexachlorocyclohexane	0	9.5E-01	na	na	1.8E+00	9.5E-01	--	na	1.8E+00	--	--	--	--	--	--	--	--	--	--	na	1.8E+00
Gamma-BHC <sup>c</sup> (Lindane)	0	--	--	na	1.1E+03	--	--	na	1.2E+03	--	--	--	--	--	--	--	--	--	--	na	1.2E+03
Hexachlorocyclopentadiene	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Hexachloroethane <sup>c</sup>	0	--	--	na	--	2.0E+00	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Hydrogen Sulfide	0	--	--	na	1.8E-01	--	--	na	1.8E-01	--	--	--	--	--	--	--	--	--	--	na	1.8E-01
Indeno (1,2,3-cd) pyrene <sup>c</sup>	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone <sup>c</sup>	0	--	--	na	9.6E+03	--	--	na	9.6E+03	--	--	--	--	--	--	--	--	--	--	na	9.6E+03
Kepone	0	0.0E+00	na	na	--	0.0E+00	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Lead	0	3.2E+02	3.6E+01	na	--	3.2E+02	3.6E+01	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Malathion	0	--	1.0E-01	na	--	1.0E-01	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	--	--	1.4E+00	7.7E-01	--	--	--	--	--	--	--	--	--	--	--	--	na	--
Methyl Bromide	0	--	--	na	1.5E+03	--	--	na	1.6E+03	--	--	--	--	--	--	--	--	--	--	na	1.6E+03
Methylene Chloride <sup>c</sup>	0	--	--	na	5.9E+03	--	--	na	5.9E+03	--	--	--	--	--	--	--	--	--	--	na	5.9E+03
Methoxychlor	0	--	3.0E-02	na	--	3.0E-02	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mirex	0	--	0.0E+00	na	--	0.0E+00	na	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nickel	0	3.5E+02	3.9E+01	na	4.6E+03	3.5E+02	3.9E+01	na	4.9E+03	--	--	--	--	--	--	--	--	--	--	na	4.9E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	6.9E+02	--	--	na	7.4E+02	--	--	--	--	--	--	--	--	--	--	na	7.4E+02
N-Nitrosodimethylaniline <sup>c</sup>	0	--	--	na	3.0E+01	--	--	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
N-Nitrosodiphenylamine <sup>c</sup>	0	--	--	na	6.0E+01	--	--	na	6.0E+01	--	--	--	--	--	--	--	--	--	--	na	6.0E+01
N-Nitrosodipropylamine <sup>c</sup>	0	--	--	na	5.1E+00	--	--	na	5.1E+00	--	--	--	--	--	--	--	--	--	--	na	5.1E+00
Nonylphenol	0	2.8E+01	6.6E+00	--	--	2.8E+01	6.6E+00	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	--	--	na	--
PCB Total <sup>c</sup>	0	--	1.4E-02	na	6.4E-04	--	1.4E-02	na	6.4E-04	--	--	--	--	--	--	--	--	--	--	na	6.4E-04
Pentachlorophenol <sup>c</sup>	0	7.7E-03	5.9E-03	na	3.0E+01	7.7E-03	5.9E-03	na	3.0E+01	--	--	--	--	--	--	--	--	--	--	na	3.0E+01
Phenol	0	--	--	na	8.6E+05	--	--	na	9.2E+05	--	--	--	--	--	--	--	--	--	--	na	9.2E+05
Pyrene	0	--	--	na	4.0E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Radionuclides	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Beta and Photon Activity (mrem/y)	0	--	--	na	4.0E+00	--	--	na	4.3E+00	--	--	--	--	--	--	--	--	--	--	na	4.3E+00
Radium 226 + 228 (pCi/L)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Uranium (ug/l)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Selenium, Total Recoverable	0	2.0E+01	5.0E+00	na	4.2E+03	2.0E+01	5.0E+00	na	4.5E+03	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	4.5E+03
Silver	0	1.3E+01	--	na	--	1.3E+01	--	na	--	--	--	--	--	--	--	--	--	1.3E+01	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2-Tetrachloroethane <sup>c</sup>	0	--	--	na	4.0E+01	--	--	na	4.0E+01	--	--	--	--	--	--	--	--	--	--	na	4.0E+01
Tetrachloroethylene <sup>c</sup>	0	--	--	na	3.3E+01	--	--	na	3.3E+01	--	--	--	--	--	--	--	--	--	--	na	3.3E+01
Thallium	0	--	--	na	4.7E+01	--	--	na	5.0E+01	--	--	--	--	--	--	--	--	--	--	na	5.0E+01
Toluene	0	--	--	na	6.0E+03	--	--	na	6.4E+03	--	--	--	--	--	--	--	--	--	--	na	6.4E+03
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene <sup>c</sup>	0	7.3E-01	2.0E-04	na	2.8E-03	7.3E-01	2.0E-04	na	2.8E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	2.8E-03
Tributyltin	0	4.6E-01	7.2E-02	na	--	4.6E-01	7.2E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	7.2E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	7.0E+01	--	--	na	7.5E+01	--	--	--	--	--	--	--	--	--	--	na	7.5E+01
1,1,2-Trichloroethane <sup>c</sup>	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
Trichloroethylene <sup>c</sup>	0	--	--	na	3.0E+02	--	--	na	3.0E+02	--	--	--	--	--	--	--	--	--	--	na	3.0E+02
2,4,6-Trichlorophenol <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Sihex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride <sup>c</sup>	0	--	--	na	2.4E+01	--	--	na	2.4E+01	--	--	--	--	--	--	--	--	--	--	na	2.4E+01
Zinc	0	2.3E+02	2.3E+02	na	2.6E+04	2.3E+02	2.3E+02	na	2.8E+04	--	--	--	--	--	--	--	--	2.3E+02	2.3E+02	na	2.8E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.  
Antidegradation WLAs are based upon a complete mix.  
Antidegradation Baseline = (0.25(WQC - background conc.) + background conc.) for human health  
= (0.1(WQC - background conc.) + background conc.) for acute and chronic
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens and Harmonic Mean for Carcinogens. To apply mixing ratios from a model set the stream flow equal to (mixing ratio - 1), effluent flow equal to 1 and 100% mix.

Metal	Target Value (SSTV)	Note: do not use QL's lower than the minimum QL's provided in agency guidance
Antimony	6.9E+02	
Arsenic	9.0E+01	
Barium	na	
Cadmium	1.3E+00	
Chromium III	8.4E+01	
Chromium VI	6.4E+00	
Copper	1.0E+01	
Iron	na	
Lead	2.2E+01	
Manganese	na	
Mercury	4.6E-01	
Nickel	2.4E+01	
Selenium	3.0E+00	
Silver	5.3E+00	
Zinc	9.1E+01	

90%  $pH = 7.3$

High Events	PH	Point	Sample	Rank	Percent	Temp	Point	Sample	Rank	ICM <sup>2</sup>	Percent
Jan 21, 1982	7.3	5	8	1	100.0%	4	28	28	28	1	100.0%
March 12, 1982	7.2	28	8	2	98.55%					2	92.00%
April 21, 1982	7.4	17	2	3	96.10%					3	83.10%
May 27, 1982	7.5	20	8	4	93.65%					4	80.60%
December 24, 1982	8.3	4	2	5	78.21%					5	66.60%
January 27, 1983	8.4	24	2	6	78.21%					6	66.60%
February 24, 1983	8.3	25	2	7	78.21%					7	62.70%
March 28, 1983	7.4	3	7	8	72.41%					8	58.80%
April 12, 1983	8.6	0	7	9	72.41%					9	58.80%
December 27, 1983	7	1	7	10	61.72%					10	47.80%
January 24, 1984	8.0	15	7	11	61.72%					11	47.80%
February 22, 1984	8.0	18	7	12	61.72%					12	47.80%
March 7, 1984	8.5	18	7	13	61.72%					13	47.80%
April 6, 1984	8.5	18	7	14	61.72%					14	47.80%
May 20, 1984	7.3	20	7	15	51.72%					15	38.80%
December 14, 1984	7.3	30	7	16	51.72%					16	38.80%
January 11, 1985	7.3	2	7	17	41.25%					17	28.30%
February 11, 1985	7.2	27	7	18	41.25%					18	28.30%
March 28, 1985	7.3	23	7	19	37.87%					19	24.90%
April 24, 1985	7.2	23	7	20	34.47%					20	21.50%
May 6, 1985	6.8	7	7	21	34.47%					21	21.50%
May 27, 1985	7	10	10	22	24.14%					22	14.10%
December 27, 1985	7	21	7	23	24.14%					23	14.10%
January 27, 1986	7.18	7	7	24	14.14%					24	8.10%
March 27, 1986	7.18	7	7	25	14.14%					25	8.10%
May 27, 1986	7.18	7	7	26	14.14%					26	8.10%
July 13, 1986	7.5	8	8	27	12.24%					27	6.20%
August 21, 1986	7.5	11	8	28	13.24%					28	6.20%
September 21, 1986	7.8	8	8	29	13.24%					29	6.20%
October 21, 1986	7.8	8	8	30	13.24%					30	6.20%
November 21, 1986	7.2	20	8	31	13.74%					31	6.20%
December 21, 1986	7.2	12	8	32	10.24%					32	3.20%
January 18, 1987	7.7	9	8	33	2.45%					33	0.20%
February 18, 1987	6.1	0	8	34	0.00%					34	0.00%
March 18, 1987	6.1	0	8	35	0.00%					35	0.00%
April 18, 1987	6.1	0	8	36	0.00%					36	0.00%
May 18, 1987	6.1	0	8	37	0.00%					37	0.00%
June 18, 1987	6.1	0	8	38	0.00%					38	0.00%
July 18, 1987	6.1	0	8	39	0.00%					39	0.00%
August 21, 1987	6.1	0	8	40	0.00%					40	0.00%

Date	Point	Sample	Rank	Percent	Temp	Pd	Sample	Rank	Percent	
June 24, 1962	7.3	7.4	1	100.00%	20	14	28	1	65.53%	
August 11, 1962	7.1	7.3	2	2	18	20	28	1	85.53%	
August 17, 1962	7.2	7.3	3	3	18	20	28	3	81.20%	
September 28, 1962	7.3	7.3	4	4	22	22	25	3	81.20%	
October 27, 1962	8.6	7.3	2	2	18	13	24	5	62.01%	
November 24, 1962	8.8	7.3	2	2	14	14	8	6	62.01%	
July 1, 1963	7.2	7.3	3	3	15	15	3	22	7	
July 5, 1963	7.3	7.3	2	3	18	10	10	7	60.87%	
August 2, 1963	7.2	7.2	8	8	21	21	21	7	60.87%	
September 6, 1963	7.1	7.2	8	8	21	12	12	7	60.87%	
November 13, 1963	7	7.2	8	8	17	21	21	7	60.87%	
December 18, 1963	8.6	7.2	8	8	16	2	17	17	82.52%	
January 21, 1964	8.6	7.2	8	8	18	2	18	17	82.52%	
July 20, 1964	7.3	7.2	4	4	24	7	18	12	47.83%	
August 23, 1964	7.5	7.1	14	14	28	4	18	10	30.43%	
September 28, 1964	8.7	7.1	14	14	21	18	11	17	10	30.43%
October 18, 1964	8	7	18	18	18	11	17	10	30.43%	
November 16, 1964	8.8	7	18	18	17	12	16	10	28.08%	
June 20, 1965	7.2	7	18	18	13	12	17	16	28.08%	
July 18, 1965	7.3	7	18	18	25	5	15	18	21.74%	
August 23, 1965	7.2	6.6	20	20	28	8	14	20	8.70%	
September 28, 1965	7.2	6.6	20	20	11	22	14	20	8.70%	
October 20, 1965	7.3	6.6	20	20	14	14	20	20	8.70%	
November 26, 1965	7.2	6.7	24	24	0	24	8	24	4.35%	
			0	0.00%				24	0.00%	

NEARLY 90% PH = 7.5  
Temp = 24°C

From Attachment 5

# 1997 Reissigian Fact Sheet

Date	pH	Point	Sample	Rank	Percent	Temp	Point	Sample	Rank	Percent
Jan 21, 1992	7.3	8	0.3		100.0%					
March 12, 1992	7.2	25	0.1		2.06.11%					
April 1, 1992	7.4	11	1.0		3.06.11%					
May 27, 1992	7.5	32	1.6		4.06.11%					
December 28, 1992	7.3	42	1.3		4.06.11%					
January 21, 1993	7.3	42	1.3		4.06.11%					
February 24, 1993	7.4	34	1.3		4.06.11%					
March 20, 1993	7.4	34	1.3		4.06.11%					
April 12, 1993	7.4	3	2.4		8.06.11%					
December 21, 1993	7.4	3	2.4		8.06.11%					
January 24, 1994	7.4	52	1.4		8.06.11%					
February 22, 1994	7.4	15	1.3		11.06.11%					
March 7, 1994	7.3	15	1.3		11.06.11%					
April 6, 1994	7.1	18	7.3		11.06.11%					
May 26, 1994	7.3	28	7.3		11.06.11%					
June 14, 1994	7.3	30	7.3		11.06.11%					
January 14, 1995	7.3	30	7.3		11.06.11%					
February 20, 1995	7.3	31	7.3		11.06.11%					
March 20, 1995	7.3	33	7.3		11.06.11%					
April 24, 1995	7.3	37	7.3		11.06.11%					
May 6, 1995	7.3	44	7.3		11.06.11%					
December 27, 1995	7.3	44	7.3		11.06.11%					
January 28, 1996	7.3	60	7.3		11.06.11%					
February 28, 1996	7.3	53	7.3		11.06.11%					
March 13, 1996	7.3	2	7.2		26.43.07%					
April 22, 1996	7.3	18	7.2		26.43.07%					
May 20, 1996	7.2	27	7.2		26.43.07%					
June 18, 1996	7.2	38	7.2		26.43.07%					
August 21, 1996	7.3	48	7.2		34.43.07%					
September 24, 1996	7.3	51	7.2		34.43.07%					
October 26, 1996	7.3	54	7.2		34.43.07%					
November 17, 1996	7.3	14	7.1		33.35.05%					
December 27, 1996	7.1	32	7.1		33.35.05%					
January 24, 1997	7.1	40	7.1		33.35.05%					
February 24, 1997	7.1	10	7		36.22.64%					
March 21, 1997	7.2	21	7		36.22.64%					
April 2, 1997	7.2	22	7		36.22.64%					
May 9, 1997	7.2	34	7		36.22.64%					
June 18, 1997	7.1	41								
July 26, 1997	7.1	49								
August 23, 1997	7.1	7								
September 18, 1997	7.1	7								
October 13, 1997	7.1	7								
November 18, 1997	7.1	7								
December 18, 1997	7.1	7								
Jan 20, 1994	7.3	47	7		36.22.64%					
Aug 23, 1994	7.3	11	0.8		43.13.21%					
Aug 23, 1994	7.3	11	0.8		43.13.21%					
September 28, 1994	6.7	35	0.8		43.13.21%					
October 18, 1994	6.7	48	0.8		43.13.21%					
Nov 18, 1994	6.8	48	0.8		43.13.21%					
Jan 20, 1995	7.2	42	0.8		48.8.43%					
Apr 18, 1995	7.2	42	0.8		48.8.43%					
Aug 27, 1995	7.2	42	0.8		48.8.43%					
Sept 22, 1995	7.2	42	0.8		48.8.43%					
October 22, 1995	7.2	42	0.8		48.8.43%					
November 20, 1995	7.2	42	0.8		48.8.43%					
December 20, 1995	7.2	42	0.8		48.8.43%					
January 20, 1996	7.2	42	0.8		48.8.43%					
February 20, 1996	7.2	42	0.8		48.8.43%					
March 20, 1996	7.2	42	0.8		48.8.43%					
April 20, 1996	7.2	42	0.8		48.8.43%					
May 20, 1996	7.2	42	0.8		48.8.43%					
June 20, 1996	7.2	42	0.8		48.8.43%					
July 20, 1996	7.2	42	0.8		48.8.43%					
August 20, 1996	7.2	42	0.8		48.8.43%					
September 20, 1996	7.2	42	0.8		48.8.43%					
October 20, 1996	7.2	42	0.8		48.8.43%					
November 20, 1996	7.2	42	0.8		48.8.43%					
December 20, 1996	7.2	42	0.8		48.8.43%					
January 20, 1997	7.2	42	0.8		48.8.43%					
February 20, 1997	7.2	42	0.8		48.8.43%					
March 20, 1997	7.2	42	0.8		48.8.43%					
April 20, 1997	7.2	42	0.8		48.8.43%					
May 20, 1997	7.2	42	0.8		48.8.43%					
June 20, 1997	7.2	42	0.8		48.8.43%					
July 20, 1997	7.2	42	0.8		48.8.43%					
August 20, 1997	7.2	42	0.8		48.8.43%					
September 20, 1997	7.2	42	0.8		48.8.43%					
October 20, 1997	7.2	42	0.8		48.8.43%					
November 20, 1997	7.2	42	0.8		48.8.43%					
December 20, 1997	7.2	42	0.8		48.8.43%					
January 20, 1998	7.2	42	0.8		48.8.43%					
February 20, 1998	7.2	42	0.8		48.8.43%					
March 20, 1998	7.2	42	0.8		48.8.43%					
April 20, 1998	7.2	42	0.8		48.8.43%					
May 20, 1998	7.2	42	0.8		48.8.43%					
June 20, 1998	7.2	42	0.8		48.8.43%					
July 20, 1998	7.2	42	0.8		48.8.43%					
August 20, 1998	7.2	42	0.8		48.8.43%					
September 20, 1998	7.2	42	0.8		48.8.43%					
October 20, 1998	7.2	42	0.8		48.8.43%					
November 20, 1998	7.2	42	0.8		48.8.43%					
December 20, 1998	7.2	42	0.8		48.8.43%					
January 20, 1999	7.2	42	0.8		48.8.43%					
February 20, 1999	7.2	42	0.8		48.8.43%					
March 20, 1999	7.2	42	0.8		48.8.43%					
April 20, 1999	7.2	42	0.8		48.8.43%					
May 20, 1999	7.2	42	0.8		48.8.43%					
June 20, 1999	7.2	42	0.8		48.8.43%					
July 20, 1999	7.2	42	0.8		48.8.43%					
August 20, 1999	7.2	42	0.8		48.8.43%					
September 20, 1999	7.2	42	0.8		48.8.43%					
October 20, 1999	7.2	42	0.8		48.8.43%					
November 20, 1999	7.2	42	0.8		48.8.43%					
December 20, 1999	7.2	42	0.8		48.8.43%					
January 20, 2000	7.2	42	0.8		48.8.43%					
February 20, 2000	7.2	42	0.8		48.8.43%					
March 20, 2000	7.2	42	0.8		48.8.43%					
April 20, 2000	7.2	42	0.8		48.8.43%					
May 20, 2000	7.2	42	0.8		48.8.43%					
June 20, 2000	7.2	42	0.8		48.8.43%					
July 20, 2000	7.2	42	0.8		48.8.43%					
August 20, 2000	7.2	42	0.8		48.8.43%					
September 20, 2000	7.2	42	0.8		48.8.43%					
October 20, 2000	7.2	42	0.8		48.8.43%					
November 20, 2000	7.2	42	0.8		48.8.43%					
December 20, 2000	7.2	42	0.8		48.8.43%					
January 20, 2001	7.2	42	0.8		48.8.43%					
February 20, 2001	7.2	42	0.8		48.8.43%					
March 20, 2001	7.2	42	0.8		48.8.43%					
April 20, 2001	7.2	42	0.8		48.8.43%					
May 20, 2001	7.2	42	0.8		48.8.43%					
June 20, 2001	7.2	42	0.8		48.8.43%					
July 20, 2001	7.2	42	0.8		48.8.43%					
August 20, 2001	7.2	42	0.8		48.8.43%					
September 20, 2001	7.2	42	0.8		48.8.43%					
October 20, 2001	7.2	42	0.8		48.8.43%					
November 20, 2001	7.2	42	0.8		48.8.43%					
December 20, 2001	7.2	42	0.8		48.8.43%					
January 20, 2002	7.2	42	0.8		48.8.43%					
February 20, 2002	7.2	42	0.8		48.8.43%					
March 20, 2002	7.2	42	0.8		48.8.43%					
April 20, 2002	7.2	42	0.8		48.8.43%					
May 20, 2002	7.2	42	0.8		48.8.43%					
June 20, 2002	7.2	42	0.8		48.8.43%					
July 20, 2002	7.2	42	0.8		48.8.43%					
August 20, 2002	7.2	42	0.8		48.8.43%					
September 20, 2002	7.2	42	0.8		48.8.43%					
October 20, 2002	7.2	42	0.8		48.8.43%					
November 20, 2002	7.2	42	0.8		48.8.43%					
December 20, 2002	7.2	42	0.8		48.8.43%					
January 20, 2003	7.2	42	0.8		48.8.43%					
February 20, 2003	7.2	42	0.8		48.8.43%					
March 20, 2003	7.2	42	0.8		48.8.43%					
April 20, 2003	7.2	42	0.8		48.8.43%					
May 20, 2003	7.2	42	0.8		48.8.43%					
June 20, 2003	7.2	42	0.8		48.8.43%					
July 20, 2003	7.2	42	0.8		48.8.43%					
August 20, 2003	7.2	42	0.8		48.8.43%					
September 20, 2003	7.2	42	0.8		48.8.43%					
October 20, 2003	7.2	42	0.8		48.8.43%					
November 20, 2003	7.2	42	0.8		48.8.43%					
December 20, 2003	7.2	42	0.8		48.8.43%					
January 20, 2004	7.2	42	0.8		48.8.43%					
February 20, 2004	7.2	42	0.8		48.8.43%					
March 20, 2004	7.2	42	0.8		48.8.43%					
April 20, 2004	7.2	42	0.8		48.8.43%					
May 20, 2004	7.2	42	0.8		48.8.43%					

6/16/2011 3:29:59 PM

Facility = Middleburg WWTP  
Chemical = Ammonia as N (Jun-Nov)  
Chronic averaging period = 30  
WLAa = 26.2  
WLAC = 2.77  
Q.L. = .2  
# samples/mo. = 12  
# samples/wk. = 3

Summary of Statistics:

# observations = 1  
Expected Value = 9  
Variance = 29.16  
C.V. = 0.6  
97th percentile daily values = 21.9007  
97th percentile 4 day average = 14.9741  
97th percentile 30 day average = 10.8544  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
Maximum Daily Limit = 5.58894615876318  
Average Weekly limit = 4.08799945702874  
Average Monthly Limit = 3.04502527504282

The data are:

9

6/16/2011 3:32:16 PM

Facility = Middleburg WWTP  
Chemical = Ammonia as N (Dec-May)  
Chronic averaging period = 30  
WLAa = 15.7  
WLAC = 5.07  
Q.L. = .2  
# samples/mo. = 12  
# samples/wk. = 3

Summary of Statistics:

# observations = 1  
Expected Value = 9  
Variance = 29.16  
C.V. = 0.6  
97th percentile daily values = 21.9007  
97th percentile 4 day average = 14.9741  
97th percentile 30 day average = 10.8544  
# < Q.L. = 0  
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity  
Maximum Daily Limit = 10.2295873736207  
Average Weekly limit = 7.48236723723311  
Average Monthly Limit = 5.57338561172097

The data are:

9

6/20/2011 3:58:22 PM

Facility = Middleburg STP  
Chemical = Copper  
Chronic averaging period = 30  
WLAa = 28  
WLAc = 17  
Q.L. = 2.2  
# samples/mo. = 1  
# samples/wk. = 1

Summary of Statistics:

# observations = 1  
Expected Value =  
Variance =  
C.V. =  
97th percentile daily values =  
97th percentile 4 day average =  
97th percentile 30 day average=  
# < Q.L. = 1  
Model used =

No Limit is required for this material

The data are:

0

REGIONAL MODELING SYSTEM VERSION 4.0  
Model Input File for the Discharge  
to WANCOPIN CREEK.

**File Information**

File Name: I:\althompson\Permit Documents\PERMITS IN PROGRESS\Middleburg  
Date Modified: December 20, 2005

.25 MGD

**Water Quality Standards Information**

Stream Name: WANCOPIN CREEK  
River Basin: Potomac/Shenandoah Rivers Basin  
Section: 9  
Class: III - Nontidal Waters (Coastal and Piedmont)  
Special Standards: none

**Background Flow Information**

Gauge Used: Leesburg 01644000  
Gauge Drainage Area: 332 Sq.Mi.  
Gauge 7Q10 Flow: 1.228 MGD  
Headwater Drainage Area: 0 Sq.Mi.  
Headwater 7Q10 Flow: 0.0084 MGD (Net; includes Withdrawals/Discharges)  
Withdrawal/Discharges: 0 MGD  
Incremental Flow in Segments: 3.698795E-03 MGD/Sq.Mi.

**Background Water Quality**

Background Temperature: 24 Degrees C  
Background cBOD5: 2 mg/l  
Background TKN: 0 mg/l  
Background D.O.: 7.525008 mg/l

**Model Segmentation**

Number of Segments: 1  
Model Start Elevation: 380 ft above MSL  
Model End Elevation: 320 ft above MSL

REGIONAL MODELING SYSTEM    VERSION 4.0  
Model Input File for the Discharge  
to WANCOPIN CREEK.

**Segment Information for Segment 1**

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	MIDDLEBURG STP
VPDES Permit No.:	24775

Discharger Flow Information

Flow:	0.25 MGD
cBOD5:	10 mg/l
TKN:	6 mg/l
D.O.:	6.8 mg/l
Temperature:	24 Degrees C

Geographic Information

Segment Length:	2.9 miles
Upstream Drainage Area:	0 Sq.Mi.
Downstream Drainage Area:	0 Sq.Mi.
Upstream Elevation:	380 Ft.
Downstream Elevation:	320 Ft.

Hydraulic Information

Segment Width:	4 Ft.
Segment Depth:	0.258 Ft.
Segment Velocity:	0.387 Ft./Sec.
Segment Flow:	0.258 MGD
Incremental Flow:	0 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Moderately Meandering
Pool and Riffle:	Yes
Percent Pools:	50
Percent Riffles:	50
Pool Depth:	0.34 Ft.
Riffle Depth:	0.23 Ft.
Bottom Type:	Silt
Sludge:	None
Plants:	None
Algae:	Only On Edges

modout.txt

"Model Run For I:\althompson\Permit Documents\PERMITS IN PROGRESS\Middleburg  
STP\Fact Sheet and Attachments\Middleburg\_10\_6\_68.mod On 12/20/2005 10:11:23 AM"

"Model is for WANCOPIN CREEK."  
"Model starts at the MIDDLEBURG STP discharge."

"Background Data"  
"7Q10", "CBOD5", "TKN", "DO", "Temp"  
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"  
.0084, 2, 0, 7.525, 24

"Discharge/Tributary Input Data for Segment 1"  
"Flow", "CBOD5", "TKN", "DO", "Temp"  
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"  
.25, 10, 6, 6.8, 24

"Hydraulic Information for Segment 1"  
"Length", "width", "Depth", "velocity"  
"(mi)", "(ft)", "(ft)", "(ft/sec)"  
2.9, 4, .258, .387

"Initial Mix values for Segment 1"  
"Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"  
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"  
.2584, 6.824, 24.35, 12.568, 8.37, 24

"Rate Constants for Segment 1. - (All units Per Day)"  
"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"  
1.2, 1.442, 12.414, 13.649, .35, .476, 0, 0

"Output for Segment 1"  
"Segment starts at MIDDLEBURG STP"  
"Total", "Segm."  
"Dist.", "Dist.", "DO", "CBOD", "nBOD"  
"(mi)", "(mi)", "(mg/l)", "(mg/l)", "(mg/l)"

0,	0,	6.824,	24.35,	12.568
.1,	.1,	6.546,	23.802,	12.474
.2,	.2,	6.334,	23.266,	12.381
.3,	.3,	6.174,	22.742,	12.288
.4,	.4,	6.057,	22.23,	12.196
.5,	.5,	5.973,	21.73,	12.105
.6,	.6,	5.916,	21.241,	12.014
.7,	.7,	5.881,	20.763,	11.924
.8,	.8,	5.863,	20.296,	11.835
.9,	.9,	5.858,	19.839,	11.746
1,	1,	5.864,	19.392,	11.658
1.1,	1.1,	5.879,	18.955,	11.571
1.2,	1.2,	5.9,	18.528,	11.484
1.3,	1.3,	5.926,	18.111,	11.398
1.4,	1.4,	5.956,	17.703,	11.313
1.5,	1.5,	5.989,	17.304,	11.228
1.6,	1.6,	6.025,	16.914,	11.144
1.7,	1.7,	6.062,	16.533,	11.061
1.8,	1.8,	6.1,	16.161,	10.978
1.9,	1.9,	6.139,	15.797,	10.896
2,	2,	6.178,	15.441,	10.814
2.1,	2.1,	6.218,	15.093,	10.733
2.2,	2.2,	6.257,	14.753,	10.653
2.3,	2.3,	6.296,	14.421,	10.573
2.4,	2.4,	6.335,	14.096,	10.494
2.5,	2.5,	6.373,	13.779,	10.415
2.6,	2.6,	6.411,	13.469,	10.337
2.7,	2.7,	6.449,	13.166,	10.26

2.8,	2.8,	6.486,	12.87,	modout.txt
2.9,	2.9,	6.522,	12.58,	10.183
				10.107

"END OF FILE"

2.8,	2.8,	5.884,	17.985,	modout.txt
2.9,	2.9,	5.933,	17.58,	10.183
				10.107

"END OF FILE"

REGIONAL MODELING SYSTEM VERSION 4.0  
Model Input File for the Discharge  
to WANCOPIN CREEK.

**File Information**

File Name: I:\althompson\Permit Documents\PERMITS IN PROGRESS\Middleburg S  
Date Modified: December 20, 2005

.25 MGD

**Water Quality Standards Information**

Stream Name: WANCOPIN CREEK  
River Basin: Potomac/Shenandoah Rivers Basin  
Section: 9  
Class: III - Nontidal Waters (Coastal and Piedmont)  
Special Standards: none

limits same as .135

WQS just met.

Rerun w/

lower BOD

**Background Flow Information**

Gauge Used: Leesburg 01644000  
Gauge Drainage Area: 332 Sq.Mi.  
Gauge 7Q10 Flow: 1.228 MGD  
Headwater Drainage Area: 0 Sq.Mi.  
Headwater 7Q10 Flow: 0.0084 MGD (Net; includes Withdrawals/Discharges)  
Withdrawal/Discharges: 0 MGD  
Incremental Flow in Segments: 3.698795E-03 MGD/Sq.Mi.

**Background Water Quality**

Background Temperature: 24 Degrees C  
Background cBOD5: 2 mg/l  
Background TKN: 0 mg/l  
Background D.O.: 7.525008 mg/l

**Model Segmentation**

Number of Segments: 1  
Model Start Elevation: 380 ft above MSL  
Model End Elevation: 320 ft above MSL

REGIONAL MODELING SYSTEM    VERSION 4.0  
**Model Input File for the Discharge  
to WANCOPIN CREEK.**

**Segment Information for Segment 1**

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	MIDDLEBURG STP
VPDES Permit No.:	

Discharger Flow Information

Flow:	0.25 MGD
cBOD5:	14 mg/l
TKN:	6 mg/l
D.O.:	6.8 mg/l
Temperature:	24 Degrees C

Geographic Information

Segment Length:	2.9 miles
Upstream Drainage Area:	0 Sq.Mi.
Downstream Drainage Area:	0 Sq.Mi.
Upstream Elevation:	380 Ft.
Downstream Elevation:	320 Ft.

Hydraulic Information

Segment Width:	4 Ft.
Segment Depth:	0.258 Ft.
Segment Velocity:	0.387 Ft./Sec.
Segment Flow:	0.258 MGD
Incremental Flow:	0 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Moderately Meandering
Pool and Riffle:	Yes
Percent Pools:	50
Percent Riffles:	50
Pool Depth:	0.34 Ft.
Riffle Depth:	0.23 Ft.
Bottom Type:	Silt
Sludge:	None
Plants:	None
Algae:	Only On Edges

modout.txt

"Model Run For I:\althompson\Permit Documents\PERMITS IN PROGRESS\Middleburg  
STP\Fact Sheet and Attachments\Middleburg\_14\_6\_68.mod On 12/20/2005 10:05:35 AM"

"Model is for WANCOPIN CREEK."  
"Model starts at the MIDDLEBURG STP discharge."

"Background Data"  
"7Q10", "CBOD5", "TKN", "DO", "Temp"  
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"  
.0084, 2, 0, 7.525, 24

"Discharge/Tributary Input Data for Segment 1"  
"Flow", "CBOD5", "TKN", "DO", "Temp"  
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"  
.25, 14, 6, 6.8, 24

"Hydraulic Information for Segment 1"  
"Length", "width", "Depth", "Velocity"  
"(mi)", "(ft)", "(ft)", "(ft/sec)"  
2.9, 4, .258, .387

"Initial Mix Values for Segment 1"  
"Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"  
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"  
.2584, 6.824, 34.025, 12.568, 8.37, 24

"Rate Constants for Segment 1. - (All units Per Day)"  
"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"  
1.2, 1.442, 12.414, 13.649, .35, .476, 0, 0

"Output for Segment 1"  
"Segment starts at MIDDLEBURG STP"  
"Total", "Segm."  
"Dist.", "Dist.", "DO", "CBOD", "nBOD"  
"(mi)", "(mi)", "(mg/l)", "(mg/l)", "(mg/l)"

0,	0,	6.824,	34.025,	12.568
.1,	.1,	6.35,	33.259,	12.474
.2,	.2,	5.984,	32.51,	12.381
.3,	.3,	5.705,	31.778,	12.288
.4,	.4,	5.496,	31.063,	12.196
.5,	.5,	5.342,	30.364,	12.105
.6,	.6,	5.233,	29.68,	12.014
.7,	.7,	5.159,	29.012,	11.924
.8,	.8,	5.114,	28.359,	11.835
.9,	.9,	5.091,	27.721,	11.746
1,	1,	5.086,	27.097,	11.658
1.1,	1.1,	5.096,	26.487,	11.571
1.2,	1.2,	5.117,	25.891,	11.484
1.3,	1.3,	5.146,	25.308,	11.398
1.4,	1.4,	5.182,	24.738,	11.313
1.5,	1.5,	5.223,	24.181,	11.228
1.6,	1.6,	5.268,	23.637,	11.144
1.7,	1.7,	5.316,	23.105,	11.061
1.8,	1.8,	5.366,	22.585,	10.978
1.9,	1.9,	5.417,	22.077,	10.896
2,	2,	5.469,	21.58,	10.814
2.1,	2.1,	5.522,	21.094,	10.733
2.2,	2.2,	5.575,	20.619,	10.653
2.3,	2.3,	5.628,	20.155,	10.573
2.4,	2.4,	5.68,	19.701,	10.494
2.5,	2.5,	5.732,	19.257,	10.415
2.6,	2.6,	5.783,	18.823,	10.337
2.7,	2.7,	5.834,	18.399,	10.26

Page 1

## Public Notice – Environmental Permit

**PURPOSE OF NOTICE:** To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

**PUBLIC COMMENT PERIOD:** August 18, 2011 to 5:00 p.m. on September 16, 2011

**PERMIT NAME:** Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

**APPLICANT NAME, ADDRESS AND PERMIT NUMBER:** Town of Middleburg, P.O. Box 187, Middleburg, VA 20118, VA0024775

**NAME AND ADDRESS OF FACILITY:** Middleburg STP, 500 East Washington Street, Middleburg, VA 20118

**PROJECT DESCRIPTION:** The Town of Middleburg has applied for a reissuance of a permit for the public Middleburg STP. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.25 million gallons per day into a water body. Solids from the treatment process will be transported to the Upper Occoquan Service Authority for disposal. The facility proposes to release the treated sewage into Wancopin Creek in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, cBOD, Total Suspended Solids, Dissolved Oxygen, Total Kjeldahl Nitrogen, Ammonia, *E. coli*, Total Nitrogen, and Total Phosphorus.

This facility is subject to the requirements of 9VAC25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

**HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING:** DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit.

**CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:** The public may review the documents at the DEQ-Northern Regional Office by appointment, or may request electronic copies of the draft permit and fact sheet.

Name: Susan Mackert

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3853 E-mail: [susan.mackert@deq.virginia.gov](mailto:susan.mackert@deq.virginia.gov) Fax: (703) 583-3821

**State "Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Middleburg STP
NPDES Permit Number:	VA0024775
Permit Writer Name:	Susan Mackert
Date:	June 17, 2011

**Major** [ ]**Minor** [X]**Industrial** [ ]**Municipal** [X]**I.A. Draft Permit Package Submittal Includes:**

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

**I.B. Permit/Facility Characteristics**

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet <b>or</b> permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?	X		
7. Does the fact sheet <b>or</b> permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

**I.B. Permit/Facility Characteristics – cont.**

	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?	X		
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Checklist – for POTWs

#### II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

#### II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

#### II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

#### II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?	X		
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

<b>II.D. Water Quality-Based Effluent Limits – cont.</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

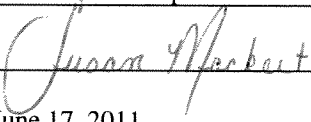
<b>II.E. Monitoring and Reporting Requirements</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			X
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

<b>II.F. Special Conditions</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?			X
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?	X		

II.G. Standard Conditions		Yes	No	N/A
1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
<b>List of Standard Conditions – 40 CFR 122.41</b>				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		X		

### Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Susan Mackert</u>
Title	<u>Environmental Specialist II Senior</u>
Signature	<u></u>
Date	<u>June 17, 2011</u>